



A Rational Dietary for Infants.

THIS series of Foods has been designed to supply for the first time a need in the rational dietary of infants fed by hand. None of the substitutes for mother's milk have hitherto been physiologically accurate. Especially is this so with the diluted cow's milk given usually in the earlier days of infant life.

The following table enables one to appreciate the difference between—

Cow's MILK—as sold in Towns.				HUMAN MILK—direct from Breast.			
Reaction.		Acid.		Reaction.		Alkaline.	
Specific gravity ..	..	..	1.031	Specific gravity ..	..	..	1.027
Water ..	..	..	87.0	Water ..	..	..	87.5
Fat ..	..	..	8.5	Fat ..	..	..	8.8
Caseln ..	..	..	8.0	Caseln ..	..	..	1.0
Albumin ..	..	..	0.5	Albumin ..	..	..	1.2
Milk Sugar ..	..	..	4.5	Milk Sugar ..	..	..	6.2
Bacteria ..	..	very numerous		Bacteria ..	..	..	absent

Thus cow's milk contains an excess of caseln which curdles in the infant's stomach, and a deficiency in soluble albumen and sugar. Condensed milk, on the other hand, contains an excess of sugar, but a decided deficiency in fat and soluble albumen. We have, therefore, endeavoured successfully to produce two complete Foods which are, physiologically, practically the same as the mother's milk. These are—

The “Allenburys” Milk Food—No. 1.

which is prepared in the form of a powder, is made from fresh cow's milk, from which, after the proximate composition has been ascertained, the excess of caseln is removed, and the deficiency in fat, soluble albumen, and milk sugar corrected. The method of preparation renders this food sterile, and boiled water alone is required in preparing it for use.

Infants should be brought up on this food until they are three months old.

If the child be strong and able to assimilate the food, it is advisable to now begin using

The “Allenburys” Milk Food—No. 2.

This food, to meet the increasing requirements of the digestive apparatus, contains besides the constituents of “First Food,” maltose, with a small proportion of dextrine, together with soluble phosphates derived from whole meal. There is, however, no unconverted starch left in the food which at this age the infant would be unable to digest.

Experience has shown conclusively that after five or six months the infant can be most advantageously reared on

Allen & Hanburys' “Malted Food.”

(The “ALLENBURYS” MALTED FOOD—No. 3.)

This has been manufactured by us for many years after the formula of LIEBIG, but by improved methods. The basis of the food is fine wheaten flour rich in nitrogen, with this advantage, that a large proportion, but not all the starch, is converted by the action of Malt Extract. The proportions are so arranged that the infant economy is not paralysed, as with some foods, by having everything digested for it, while on the other hand it is not given too much starch to digest. This food can be most successfully given when the mother's milk is beginning to fail both in quantity and richness, without the child being actually weaned. In this way a gradual transition can be effected from the natural to the full use of the artificial food.

It has been found already that this series of desiccated foods have proved invaluable on board ship, especially in the case when children have to be taken at an early age to India. Owing to their careful preparation the foods keep well in hot climates, and the infant is shielded from the risk of bacterial infections by polluted milk. All risk is removed if only the water used be sterilized by well boiling.

PAMPHLET WITH TESTIMONIALS ON APPLICATION.

Allen & Hanburys Ltd., LONDON.

Offices, Laboratories & Warehouse—BETHNAL GREEN, E.

City House—PLOUGH COURT, LOMBARD STREET, E.C. West End House—VERE STREET, W.

Fock Manufacturing—WARE MILLS, HERTS. Cod Liver Oil Factories—LOFODEN & SÖNMÖR, NORWAY

Depot for AUSTRALIA—484, COLLINS STREET, MELBOURNE.

See also pages iv, v, vi, vii.

DIGESTIVE. TONIC. NUTRITIVE.

Byno-Hypophosphites

“One of the most popular tonics of the day.”

—*British Medical Journal.*

ADVANTAGES.

The inert sugar of the ordinary syrupy preparations is in BYNO-HYPOPHOSPHITES replaced by the active Malt Extract BYNIN. Hence BYNO-HYPOPHOSPHITES is DIGESTIVE & NUTRITIOUS, containing as it does the diastasic ferment of Carbo-hydrates and also the soluble Phosphates and Albumenoids of the finest malted barley.



BYNO-HYPOPHOSPHITES is a **TONIC** not only to the nervous system but also to the heart muscle and digestive apparatus.

With **BYNIN** as a vehicle, it contains the Hypophosphites of Iron, Manganese, Calcium, and Potassium, together with the Alkaloids of Cinchona and Nux Vomica in combination with their natural acids, in which form they are more readily assimilated. The quantity of Alkaloid is carefully standardised, there being the equivalent of 1-40th grain of Strychnine in each ounce.

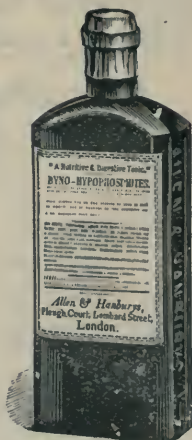
The presence especially of Iron and Manganese in this preparation indicates its value as a direct hæmopoietic agent.

The Hypophosphites, taken as a group, are invaluable restoratives in cases of brain fatigue and nervous exhaustion. It is a matter of clinical observation that PHOSPHORUS, essential in the production of the lecithin compounds of the nervous system, is FAR MORE READILY ASSIMILATED in the form of HYPOPHOSPHITES than as Phosphates, Phosphoric Acid, or even free Phosphorus.

The other allied tonics in which BYNIN is used are :

Bynin-Amara—Easton Syrup. Byno-Phosphates—Chemical Food.

SAMPLES FREE TO THE MEDICAL PROFESSION.



Allen & Hanburys Ltd., LONDON.

"A perfect combination of Malt Extract and Cod-Liver Oil."—*British Medical Journal.*

Bynol. *The "Perfected" Malt & Oil.*

BYNOL, though containing a much larger percentage of COD-LIVER OIL than the ordinary preparations of MALT and OIL so widely sold, is, nevertheless, not only free from all unpleasant taste, but has a most agreeable nutty flavour, so that it is relished as a sweetmeat by many children. It can be taken without difficulty by delicate patients, being readily digested and assimilated. This result is due in large measure to the intimate combination of the MALT EXTRACT with the OIL, globules of the latter not being distinguishable even under a microscope.

The Malt Extract employed is exceptionally nutritious and active, while the Cod-liver Oil is of absolute purity, being made at Allen & Hanburys' own factories in Norway, from the fresh and selected livers of the Cod-fish only.

SAMPLES FREE TO MEDICAL MEN.

...

The late **Sir ANDREW CLARK**, in a Lecture at the London Hospital, remarked:—

"I have said that these fibroid cases are poor creatures, thin and white, and have what may be called nutritive debility, and the question is, What am I to do with them? You cannot do better than endeavour to make the patient walk in the way of physiological righteousness. But that sometimes will not do. Some people may be physiologically well behaved, and somehow they do not thrive on it. Can you do anything in those cases? There are two remedies which sometimes do succeed where the ordinary diet will not succeed in nourishing the patient—the one is Cod-liver Oil and Malt given with food—a preparation called **BYNOL**—and the other is the remedy called **BYNIN EMULSION**, consisting of Hypophosphites, Oil, and Malt; both are prepared by Messrs. **ALLEN & HANBURY'S**. These are two good nutritive agents in promoting nutrition."

Allen & Hanburys Ltd., LONDON.

Offices, Laboratories & Warehouse—BETHNAL GREEN, E.
 City House—FLOUGH COURT, LOMBARD STREET, E.C. West End House—VERE STREET, W.
 Food Manufactory—WARE MILLS, HERTS. Cod Liver Oil Factories—LOFODEN & SÖNMOE, NORWAY.
 Depot for AUSTRALIA—484, COLLINS STREET, MELBOURNE.
 See also pages iii, iv, vi, vii.

THE

"Allenburys" Throat Pastilles

Manufactured by ALLEN & HANBURYS Ltd.

THE increased knowledge of the local treatment of the various morbid conditions of the Throat necessitates nowadays the employment of a greater variety of drugs, and in a more palatable and demulcent form than the lozenges in common use. These Pastilles have been in use many years, and the following list is a result of the experience of many practitioners.

For the convenience of the Medical Profession the Pastilles may be conveniently grouped under the following headings.

For Ordinary Relaxed Throat.

- No. 11.—Chlorate of Potash, 1 grain in each.
 „ 32.—Red Gum and Chlorate of Potash
 (Gum: Rubr: gr: ii, Pot:
 Chlor: gr: i.).
 „ 14.—Tannin, 1 grain.
 „ 29.—Rhatany and Cocaine (Ext: Kramer: gr: ii. Cocain: gr: 1-10th).

For Overstrain of Throat involving Relaxation.

- No. 38.—Chlorate of Potash, Borax and Cocaine (Pot: Chlor: et Boracis $\bar{a}\bar{a}$. gr: i. Cocain: gr: 1-20th).
 „ 47.—Alum and Tannin ($\bar{a}\bar{a}$. gr: i.).

These are also useful in relieving granular pharyngitis (Clergyman's Sore Throat). For the removal of the Tenacious Mucus, Ammon: Chloride Pastilles are indicated.

For Irritable Relaxed Throat with Elongated Uvula.

- No. 29.—Rhatany and Cocaine (Ext: Kramer: gr: ii. Cocain: gr: 1-10th).
 „ 31.—Red Gum and Cocaine (Gum: Rubr: gr: ii. Cocain: gr: 1-20th).
 „ 24.—Cocaine, 1-10th and 1-20th grain.
 „ 16.—Bromide of Ammonium.

For Sore Throat of Influenza and Fever.

- No. 6.—Aconite. Each Pastille equals $\frac{1}{2}$ minim of R.P. Tincture.
 „ 2.—Ipecacuanha, $\frac{1}{4}$ grain.
 Both are useful for the Feverish Colds of Children.

For Sore Throats & Tracheitis, Influenza Cold.

- No. 43.—Menthol, 1-10th and 1-20th grain.
 „ 19.—Chlorid- of Ammonium, 2 grains. Stimulant Expectorant.
 „ 4.—Compound Morphia and Ipecacuanha (Morphinæ, gr: 1-40th; Ipecacuanhæ, gr: 1-5th; Scillæ, gr: 1-5th).
 „ 45.—Menthol and Rhatany (Menthol, gr: 1-20th; Ext: Kramer: gr: ii.).

These Pastilles are supplied in 1-lb. bottles, and in boxes containing 3 ozs.

For Acute Tonsillitis and Diphtheritic Throat.

- No. 9.—Menthol, Cocaine and Red Gum (Menthol and Cocaine, $\bar{a}\bar{a}$. gr. 1-20th; Red Gum, gr. ij).
 No. 44.—Menthol and Cocaine ($\bar{a}\bar{a}$. gr.: 1-20th).
 „ 46.—Menthol and Bromide of Ammon. (Menthol, gr: 1-20th; Ammon. Bromidi, gr: i.).
 „ 15.—Carbolic Acid, $\frac{1}{2}$ grain.
 „ 41.—Eucalyptus Oil.
 „ 30.—Boracic Acid, 1 grain.
 „ 5.—Opium and Belladonna. Equals the Lozenges of the B.P.

Compound Guaiacum, Guaiacum, Potash Chlorate, and Red Gum may be used with advantage in stages of recovery or Chronic Enlarged Tonsils.

For Acute Pharyngitis, Acute Inflammation of Pharynx.

AS ADJUVANT USE.

- No. 5.—Opium and Belladonna. Equals the Lozenges of the B.P.
 „ 6.—Aconite. Equals $\frac{1}{2}$ minim of Tincture, B.P.
 „ 24.—Cocaine, 1-10th and 1-20th grain.
 During recovery, use ASTRINGENT PASTILLES.

For Irritable Throat of Phthisis, Laryngeal Phthisis.

- No. 1.—Morphia, 1-40th grain.
 „ 26.—Codeine, $\frac{1}{4}$ th grain.
 „ 34.—Terebene, 2 minims.
 „ 36.—Pumilio Pine, 1 minim.

For Ulcerated Conditions of Mouth, Tongue, Gum Boils.

- No. 17.—Chlorate of Potash and Borax, $\bar{a}\bar{a}$. gr: i.
 „ 30.—Boric Acid 1 grain.
 „ 15.—Carbolic Acid, $\frac{1}{2}$ grain.

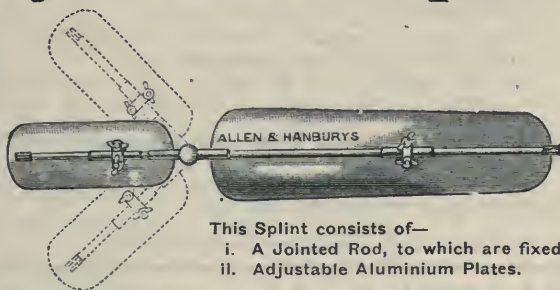
In ordering these Pastilles, numbers may be quoted for convenience.

Allen & Hanburys Ltd., LONDON.

ALLEN & HANBURY'S Ltd.,
 Manufacturers of **SURGICAL INSTRUMENTS**
Hospital Furniture and Appliances.

HOPPE'S PATENT

Adjustable Splint.



This Splint consists of—

- i. A Jointed Rod, to which are fixed
- ii. Adjustable Aluminium Plates.

In consequence of the great success of this Splint, and the increasing demand both in Great Britain and the Colonies, Messrs. ALLEN & HANBURY'S Ltd. are enabled to manufacture in large quantities, and can therefore offer it at a greatly reduced price. This is the most useful Splint that has ever been brought before the notice of the Medical Profession. It can be adapted to the Arm or Leg, and can be used as a Thigh Splint. It is suitable for any case of Fracture and can be fixed in any position. The plates are made of aluminium and hence are light, cleanly, and transparent to the Röntgen or X Rays. The adjustable rod can also be applied to most of the wooden splints now used.

The Price is reduced from 21/- to 15/- each.

They are made in Two Sizes—ADULT'S and CHILD'S.

Extra Parts can also be supplied, viz. :—

METAL HAND PIECES, for Right or Left Hand, 2/6 each.

LARGE THIGH OR LEG PLATE, 2/6 each.

EXTENSION SCREW, 7/6 each.

CONNECTING PLATES TO FORM THIGH SPLINT, 7/6 each.

Allen & Hanburys Ltd.,

Surgical Instrument Department: 48, WIGMORE ST., CAVENDISH SQ., W.

City House: PLOUGH COURT, LOMBARD STREET, E.C.

Instrument Factory: 59, WEYMOUTH STREET, W.

LONDON.

Telegrams:—"NURTURING, LONDON."

"BORTHWICK'S The ACME of Beef Nourishment.

BRAND—

"BI-WIN" BOUILLON."

381, Kingsland Road,
LONDON, N.E.

What the "HOSPITAL" says:—

BORTHWICK'S BOUILLON BRAND "BI-WIN."

"We have received a sample of this well-known preparation, and our renewed acquaintance with it confirms the high opinion which we formed when it was first submitted to our notice. It is a very concentrated preparation, consisting of solid matter to considerably over 50 per cent., and these solids consist not only of extractives of meat, but also of peptones and albumoses—**hence there are present in "BI-WIN" not only stimulating but nutritive substances**, which render the preparation eminently suited for the purpose of **nourishing invalids and others** whose strength has been lowered by wasting disease or mental worry. It is a distinctly agreeable beverage, and may be used alone or with all kinds of soups, stews, and hashes."

HEALTH is Uncertain! SICKNESS Costs Money!

OUR Policies of Sickness Assurance admirably meet the needs of Medical Men. No entrance fee. No probationary period. No liability on the part of the Assured. £1 to £10 per week.

"The scheme is unique."—*Newcastle Chronicle*.

"Soundly managed and as solid as a rock."—*Business*.

LIFE ASSURANCE WITH NEW AND NOVEL FEATURES.

**ACCIDENTS and DISEASES covered by
the "PERFECTED" Policy.**

SICKNESS ACCIDENT & LIFE ASSOCIATION LTD.

London Office: 35, MOORGATE STREET, E.C.

Bristol Office: OLD POST OFFICE BUILDINGS.

Head Office: 24, YORK PLACE, EDINBURGH.

Points **MALTINE** with about **Cod-Liver Oil**

IT IS THOROUGHLY PALATABLE.

The delicate flavour of "Maltine" admirably adapts it for a menstruum for Cod-Liver Oil, and "Maltine" with Cod-Liver Oil is tolerated with ease by the most fastidious.

IT IS READILY ASSIMILABLE.

The oil in "Maltine" with Cod-Liver Oil is most minutely broken up, the division being far finer than that of the fat in milk. The combination being effected by mechanical means, is not disintegrated by acid, as is the case with emulsions. Maltine with Cod-Liver Oil has been proved by clinical experience to be the most easily digested of all Cod-Liver Oil preparations.

IT IS HIGHLY NUTRITIVE.

In "Maltine" we have a powerful agent for the conversion of farinaceous food into soluble form, also a food rich in carbohydrates, proteids and phosphates in most assimilable form. These principles, together with Cod-Liver Oil deprived of all its disadvantages, render Maltine with Cod-Liver Oil a most successful reconstructive agent, and explain its long and extensive employment by the Medical Profession.

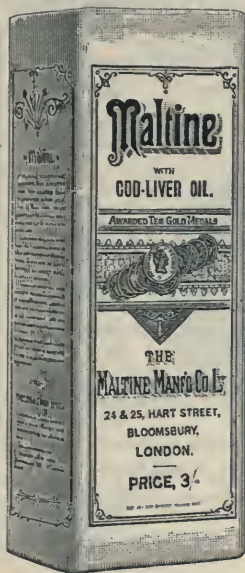
The British Medical Journal reports:—"The therapeutic value has been so thoroughly recognised and is so well known. . . Patients unable to tolerate the purest and most carefully prepared Cod-Liver Oil can readily digest and assimilate it when

combined with 'MALTINE.'"

The word "MALTINE" is our Registered Trade Mark. In prescribing kindly specify "MALTINE COMPANY."

We shall be pleased to send Samples free of charge to Medical Men.

THE MALTINE MANUFACTURING COMPANY, Ltd.,
24 & 25, HART ST., BLOOMSBURY, LONDON, W.C.



MADE FROM SELECTED MIDLOTHIAN OATS.

SCOTT'S (In Sealed Bags.)
"ROYAL" STAG BRAND
OAT MEAL.

OF ABSOLUTE PURITY. SPECIALLY PREPARED FOR FAMILY USE.

By Special Appointment to H.R.H. the Prince of Wales.

"Your preparation is certainly the best I have ever examined."
 H. C. BARTLETT, Ph.D., F.C.S.

SCOTT'S
MIDLOTHIAN
OAT FLOUR.

UNEQUALLED as the most wholesome and nutritious food
 for Infants, Invalids, and persons of weak
 digestion.

Entirely free from husk, and specially rich in flesh and bone
 forming properties.

Nine First Class Exhibition Awards.

SCOTT'S
IMPROVED
OAT CAKES.

DELICIOUS. — WHOLESOME. — NUTRITIOUS.

SAMPLES FREE ON APPLICATION TO—
 SOLE MAKERS:

A. & R. SCOTT, Ltd., 28, Buchan St., GLASGOW.
 375, City Road, LONDON, E.C.

NO FANCY PRICE.

NATURAL FOOD FOR MAN.

PREVENTS

INDIGESTION.

EAT

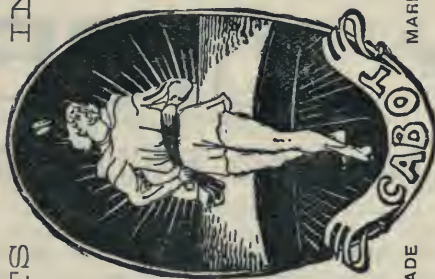
CABOT

EAT

CABOT

BREAD.

BISCUITS.



TRADE

MARK.

Warranted not to contain Chemicals or Animal Fat.
AN EMPIRE PRODUCT.

For all Particulars
apply to—

HUMPHRIES & BOBBETT, Castle Flour Mills, BRISTOL.

PURVEYORS TO H.R.H. THE PRINCE OF WALES.



ICH DIEN,

BRAND & Co.'s MEAT JUICE.

Prepared from the finest **ENGLISH MEAT.**

"This is a powerful, nourishing, and stimulating fluid, obtained from prime beef by submitting it to pressure in the cold—a method of preparation which must be regarded as highly satisfactory, for, according to our analysis, the valuable principles of the meat have not only been preserved intact, but the fresh, agreeable, and natural flavour of beef has also been retained."—*Lancet*, January 7th, 1893.

Supplied to Her Imperial Majesty the **EMPRESS of RUSSIA.**

PRICE 2/6 per bottle.

CAUTION. Beware of Imitations. Each genuine article bears the Original Firm's Signature and Address:—

Brand & Co. Ltd.

11, LITTLE STANHOPE ST., MAYFAIR, LONDON, W.

Price Lists of Invalid Preparations free on application to—

BRAND & CO., Ltd., at above address.

The Safeguard against Bad Drinking Water.



STILL.

NATURAL Malvern Water

The "ALPHA BRAND,"

FROM THE

Historic Spring

IN THE POSSESSION OF

W. & J. BURROW.



SPARKLING.

The Purest of all Natural Table Waters.

THE attention of the Medical Profession is invited to the above pure Table Water, and also to, the Mineral Waters—Soda, Potash, Seltzer, and Lithia Waters—prepared with it. Burrow's Malvern Lithia Water is of acknowledged excellence, and should be prescribed as "Burrows" when ordering it for Gouty Patients, to ensure obtaining the genuine. It will be found of very superior efficacy.

◆◆◆◆◆

*Any of the above Waters can be obtained in Cases, Carriage Paid,
by ordering from—*

W. & J. BURROW,
THE SPRINGS, MALVERN.

TELEGRAMS: "SPRINGS, MALVERN."

BATTLE'S SOLUTION OF OPIUM.

LIQUOR OPII SEDATIVUS (BATTLE).

Strength—Twice that of Tinctura Opii B.P.

Battle's Solution of Opium may be given with the greatest of safety in those cases where an opiate is required or indicated, and from its great purity, absence of all hurtful matter, such as narceine and resinous bodies, is admissible when all other preparations would prove hurtful.

Liquor Opii Sedativus (Battle) having now existed for nearly 100 years, and after being opposed by vain and worthless opponents has upheld its old position as "Second to None" in the Hypnotic World.

Battle's Solution of Opium has none of the disagreeable after-effects that most soporifics and hypnotics have, no nauseating or depressing influences with racking headaches, etc., but exercises a quieting and benign sway over the patient, giving him or her a refreshing sleep with freedom from pain. The last few years it has come to the front in cases of Cancer and Sarcoma, having been used widely both in private and hospital practice with great ease and comfort in these instances.

Battle's Solution of Opium never varies in strength.

Battle's Solution of Opium does not leave behind it any unpleasant effects.

Battle's Solution of Opium is now in use throughout the United Kingdom; throughout the Continent (France excepted); the Colonies, and largely in America, both South and North; and we ask all those who have not tried Battle's Solution of Opium to send for Samples (Free).

The "Medical Annual," speaking of Opium says: "**Battle's Solution of Opium** is a common word in the Practitioner's vocabulary. It has gained its reputation by its intrinsic value as a remedy which contains all that is sedative and anodyne in opium without its resinous constituents which are, therapeutically speaking, impurities."

The "Lancet," speaking of Opium, says: "New Hypnotics come and go, each with hopeful forecast of being superior to those already known, each in turn aspiring to give peaceful refreshing sleep, which shall be followed by no unpleasant after-effects; and yet, in the minds of many thoughtful practitioners, opium and its preparations still maintain their ground." We would point out to the Medical Profession that Battle's Solution of Opium has for the past eighty years answered these three most important requirements, and stands out above all other hypnotics in excellence.

LIQUOR OPII SEDATIVUS.

The striking appearance resulting from the evaporation of Battle's Sedative (*Plate III. Fig. 1*) first drew our attention to the mode of investigation now described. We have examined it frequently, and always have met with the same characters. The slices present an almost opaque mass of crystals of morphine salts and codeine, with a very small portion of narcotine (and meconic acid?), and so far as we have observed, complete absence of resinous matter and narceine. Any one who has studied the microscopic characters of this preparation will readily understand how it has kept its place with the Profession in spite of the cheap imitations which have been so largely puffed as substitutes for it. Though we have experimented much with a view to preparing a similar liquor, we have not yet arrived at an identical result.

We do not guarantee our Preparations unless in original bottles, with the autograph of RICHARD BATTLE over each cork and on the label, *without which none is genuine.*

DIGESTENZYMES DAMANCY, in Tablets.

This is a combination of the digestive ferments found in the alimentary tract, and is the outcome of long experimentation and test, both chemical and clinical. It has been found to be of unusual value in Dyspepsia generally, as also in the troubles arising from both Primary and Secondary Indigestion, such as Marasmus, Rheumatism, Gout, &c., also in the Impaired Digestion accompanying Fevers, and, although it is not purgative in action, in Habitual Constipation.

The Diastase in the preparation is extremely active in acid, alkaline and neutral media, while the Pepsin and Pancreatin are of the highest purity and strength.

The tablets have chocolate incorporated with them, and it is suggested that they should be broken up in the mouth, before being swallowed, at the early part of a meal, so that full advantage may be taken of the action of the enzymes present. It is well known that some of the tablets on the market disintegrate very slowly, and it becomes a question, therefore, whether their effect is obtained at the expected time, if at all.

For children, half a tablet is sufficient.

Reprinted from THE LANCET, October 9th, 1897:

"We have proved the digestive activity of the tablet on starch as well as on the white of egg in both an alkaline and acid medium. The activity of the enzymes present is thus established. The tablets should, therefore, supply a distinct aid along the whole alimentary tract in providing the specific enzyme that may be indicated."

Reprinted from THE HOSPITAL, November 13th, 1897:

"The administration of these tablets at the commencement of a meal is likely to be followed by the best of results. We feel justified in recommending this new preparation to the notice of the profession."

Samples sent Post Free on application.

SENECIN ELIXIR COMP.—This preparation is for the treatment of Uterovarian troubles, such as Amenorrhœa, Dysmenorrhœa, Atony of the Uterus and its Appendages, while its tonic properties render it valuable also in Menorrhagia. It has received considerable attention of late in consequence of its value in Threatened Abortion, in which cases it should be given for about a week before the time at which the abortion usually takes place.

PEPSIN (B.P. Strength).—We offer this in the form of tablets prepared with chocolate, which are agreeable to take, and may be broken up in the mouth before being swallowed, so that the effect may be obtained without delay. The objection often made to liquid preparations of pepsin in consequence of precipitation does not apply to these tablets, the pepsin not being in solution, and the ferment will be found to maintain its strength for an almost indefinite period. The tablets will be found suitable for administration to children, with whom pepsin is now so frequently found to produce beneficial effects, even when nitrogenous food is not taken. Every care is taken to prevent injury to the ferment during the process of manufacture, precaution being taken to exclude mucus or other undesirable ingredients, while the solubility of the tablets will be found to be perfect. The good results so frequently experienced in indigestion after the administration of pepsin depend largely on the quality and condition of the pepsin used. In these respects our preparation will be found to be perfectly satisfactory. We invite comparison of the prices with those of any other manufacture, while every effort is made to ensure that the quality shall be of the highest class obtainable by the best-known scientific methods of preparation. In Tablets of 2 grains and 5 grains respectively.

ELIXIR HYPOPHOSPH. CO.—Also in the form of tablets prepared with chocolate. These tablets present a convenient method of administering our Compound Elixir of the Hypophosphites in any case in which a saccharine solution does not agree with the stomach. Each tablet is equivalent to an average dose (1 drachm) of the Elixir.

Our preparation of the Hypophosphites has gained a high reputation in the treatment of Debility, Anæmia, Scrofulous Affections, Consumption, and Tuberculous conditions generally.

This preparation is easily borne by the stomach, rapidly produces characteristic effects on the system, and is well known for its pronounced effect in increasing the appetite, in assisting the nutritive processes, and as being of unusual value in Neurasthenia and Nervous Affections generally, while it is found to be free from the irritating effects sometimes observed during the administration of phosphates.

The purest ingredients only are used, while the price is extremely low.

Samples of our preparations, with literature and list of prices, can be obtained Post Free.

DAMANCY & CO., manufacturing Chemists,
69, Berner St., Oxford St., LONDON, W.

VIROL

is an Ideal Form of Fat Food for Children and Invalids.

It is composed of Red and Yellow Bone Marrow, combined with the fats and proteids of raw eggs, active Malt Extract, &c., in a ratio in accordance with physiological principles, and is a very pleasant form of administering natural Iron and Fat.

MARROL

is a most agreeable substitute for Cod Liver Oil for Adults.

It is prepared from Ox-bone Marrow, Extract of Malt, &c., and does not cause dyspepsia or any digestive derangement.

As fatteners both VIROL and MARROL supersede Cod Liver Oil, whilst their attractive flavour enables them to be eaten on toast, or in a variety of ways, replacing unpleasant medicines by a Food Luxury.



MANUFACTURED BY

BOVRIL, LTD., LONDON,

Food Specialists, Hospital Purveyors.

Contractors to Her Majesty's and Foreign Governments, &c.

Chairman: The Right Hon. LORD PLAYFAIR, G.C.B., LL.D.

Consulting Chemists: { Professor SIR EDWARD FRANKLAND, K.C.B., M.D.
Corr. Mem. French Institute.
WILLIAM HARKNESS, F.I.C., F.C.S., F.R.M.S.
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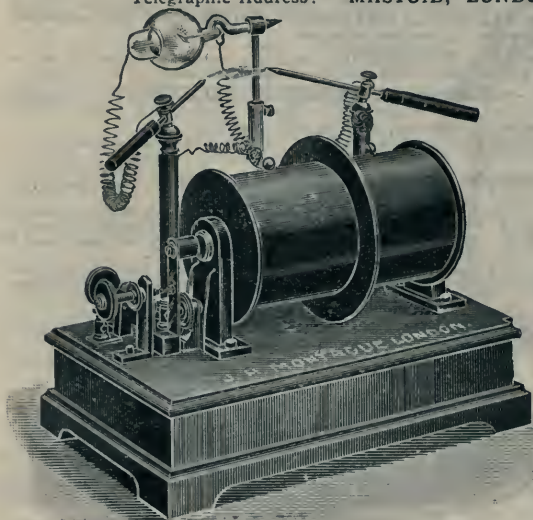
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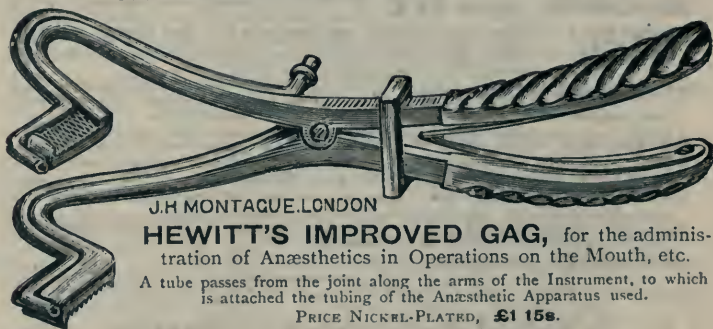
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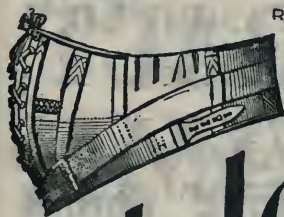
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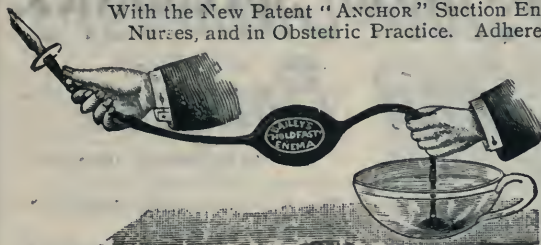
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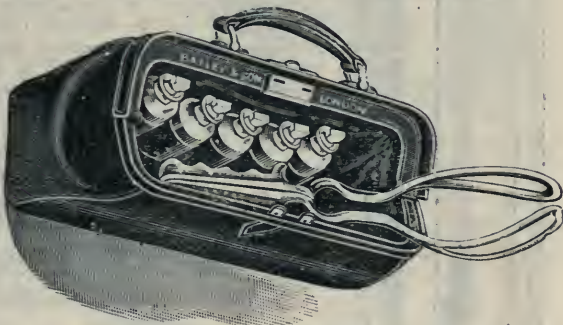
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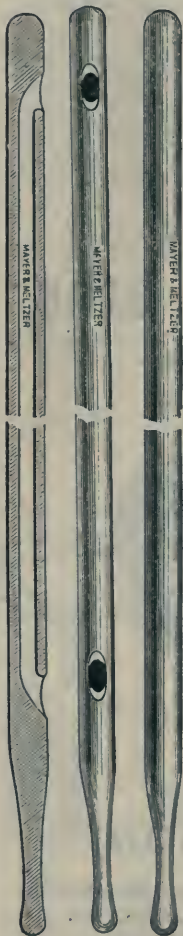
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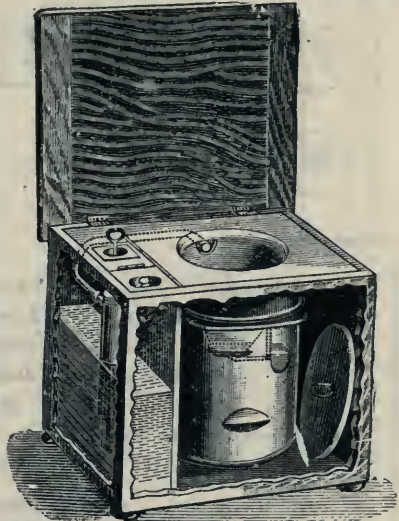
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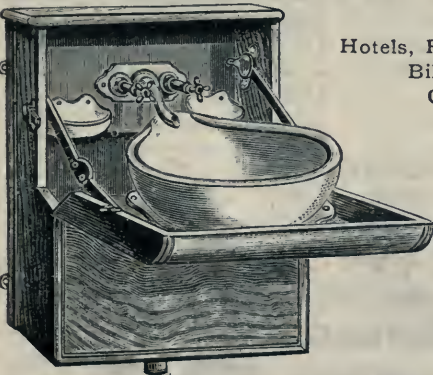
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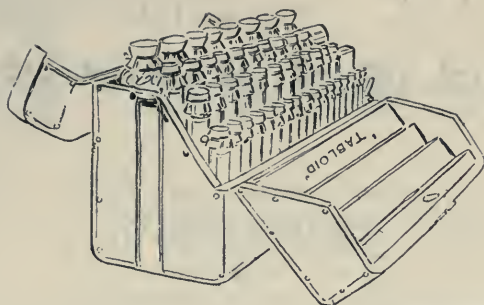
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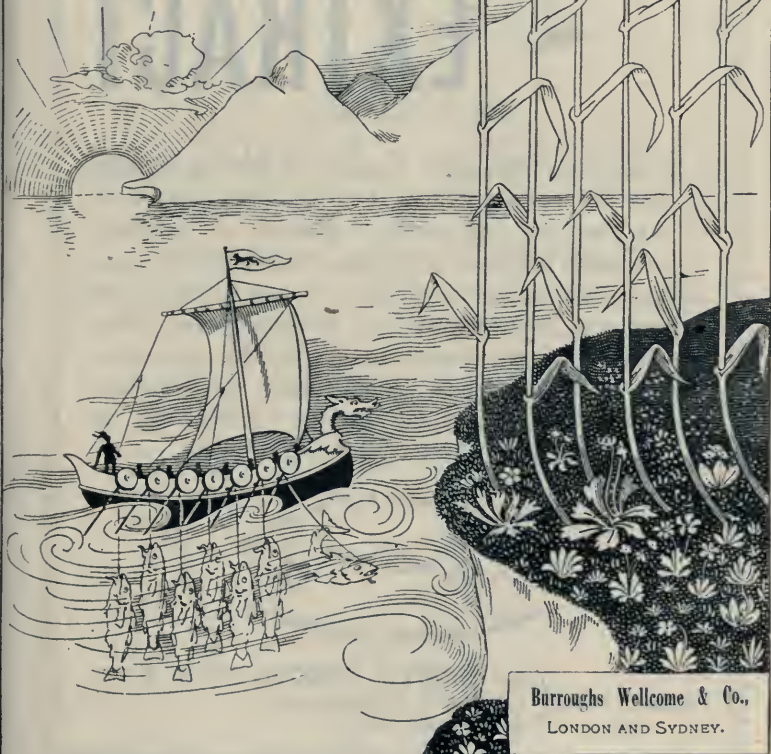
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ATLAS OF PATHOGENIC BACTERIA WITH DESCRIPTIONS OF THEIR MORPHOLOGY AND MODES OF MICROSCOPIC EXAMINATION
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P R E F A C E .

IN preparing our sixteenth annual issue we have worked on the lines which have already met with the approval of our readers.

While reviewing the progress of medical science as presented by current medical literature, we have always found that there are subjects which require bringing up to date, and concerning which it is desirable to have direct information from those who by their special experience are in a position to afford it. As a result, the volumes of the *Medical Annual* abound in original articles containing information which it would be difficult to obtain from any other source.

More than six hundred of our readers have agreed that an index to the volumes covering, say, the past ten years, would be of great value to the profession. Representing, as it would, not merely every medical and surgical addition to our knowledge during that time, but, as every fact recorded in the *Annual* is accompanied by a reference to the original source of information, it would practically form a bibliography to the medical literature of the world during that period.

Such a work would involve great labour in production, because to render it of value to the profession it should be sufficiently detailed to afford a large amount of information without further reference to the volumes quoted. Our publishers consider that the work could be produced at the cost of a single volume of the *Annual*, and as we propose to set the work in hand at once, we should be glad to hear from those readers who require copies. We think that the period from

1887 to 1898, which includes twelve volumes of the *Annual*, will meet the requirements of our readers.

In our present issue we may mention the appearance of an atlas of the "Bacteria Pathogenic in Man," by Mr. S. G. Shattock, F.R.C.S. of the Royal College of Surgeons Museum. The beautiful illustrations are accompanied by a practical description of the methods of isolating and examining these disease germs, which will render their detection more easy to the general practitioner than it has formerly been. We have been obliged to hold over the completion of the plates to our next issue, when we hope to have provided our readers with a complete atlas of the bacteria which have assumed such an important place in medical study.

Another new departure which we have attempted, subject to the approval of our readers, is a report of the legal decisions which either affect the medical profession directly or have reference to the public health.

We thank our collaborators in all parts of the world for the cordial help they have afforded us in the production of this volume. It will be a satisfaction to them, as well as to our readers, to know that our last issue eclipsed in the extent of its circulation all previous editions.

*The "Medical Annual" Offices,
Bristol, England, February, 1898.*

As we go to press, we deeply regret to hear of the death of our friend and colleague, Prof. Theophilus Parvin, whose work in Obstetrics and Gynæcology has ever been highly valued by ourselves and throughout the world. Cut off at the comparatively early age of 67 years, he did not live to read in this volume the papers which now constitute his final contribution to our pages.

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THE MEDICAL ANNUAL.

PART I.—THERAPEUTICS.

The Dictionary of New Remedies,

AND REVIEW OF THERAPEUTIC PROGRESS FOR 1897.

BY WILLIAM MURRELL, M.D., F.R.C.P.,

Phys. Lect. on Materia Medica and Therapeutics, Westminster Hospital,

INTRODUCTORY.

THE past year has not been marked by the introduction of any very great novelty in the domain of pharmacology and therapeutics. The treatment of diphtheria by **Antitoxic Serum** is not making the advance that was anticipated. This is probably due to the fact that there is no guarantee that all antitoxins are standardized in the same way, and that considerable doubt still exists respecting the relative strengths of the preparations supplied by different makers. This is not the case in Germany, where, for a nominal fee, a certificate of strength and purity is given by a government department, so that all possibility of doubt is removed. Our Home Office was approached on the subject but declined to take action on the ground that the matter did not fall within their province, whilst the Board of Trade equally declined to interfere. It is hoped that the Laboratories Committee of the Royal College of Physicians of London and of the Royal College of Surgeons of England, acting in conjunction with the British Institute of Preventive Medicine, will be able to agree on a course of action which will place matters on a firmer basis.

As to the results of the treatment, it has been found that in the hospitals of the Metropolitan Asylums Board the percentage mortality as a whole has fallen from 29·6 per cent.—the lowest previously reported—to 20·8 per cent. Of the cases that came under treatment on the first day the death-rate has fallen to the remarkable figure of 4·7 per cent., as compared with 22·5 per cent. in 1894. For the five years 1890-1894 the mortality amongst the post-scarlatinal cases was slightly over 50 per cent., while now that most of these cases are

treated by antitoxin the mortality has fallen to 5 per cent., although the mortality amongst the cases treated on the fourth or fifth day and later is over 40 per cent. Amongst those treated on the first day it is 2·8 per cent. Taking those treated with antitoxin only, the mortality is 5·7 per cent. on the total and 2·3 on the first day; indeed, out of two hundred and fifty cases treated at once, only six died.

Dr. Sims Woodhead points out in his second Harben Lecture¹ that these figures indicate very clearly that when antitoxin is given in time to prevent the degenerative changes taking place in the nerves, muscles, kidneys, and liver, most of the patients recover. On the other hand, when the patient is allowed to go beyond the second or third day, the mortality is still high. Antitoxin undoubtedly enables some of the cases to tide over the acute period and ultimately to recover, even when treatment is commenced late; but the best results are always obtained from early treatment.

In the treatment of laryngeal cases it is found that not only is the percentage of tracheotomies very greatly diminished, namely, from 56 to 41 per cent., but of those cases in which tracheotomy was performed, the percentage mortality has fallen from 70·4 to 41 per cent., whilst the percentage mortality of all laryngeal cases in the hospitals has fallen from 62 in 1894 to 29·6 in 1896.

Concerning the supposed drawbacks of the treatment, the words of the report of the physicians of the Asylums Board Hospitals speak in no undecided terms: "We have found that with the use of smaller doses of a more potent serum the rash, pains in the joints, and secondary pyrexia have been comparatively trivial; we can now state that there is practically no risk associated with their development." Abscesses are sometimes met with, but these are to be associated with the septic element, which is present in so large a proportion of the severe attacks; "taking this into account the number of abscesses is not excessive." Albuminuria is certainly due to the use of the antitoxin.

The results obtained in the treatment of septicæmia by means of the antitoxic serum of Marmorek have been less favourable than those which have followed the use of the antitoxin of diphtheria. Its employment in the treatment of puerperal fever has not been attended with success.² The serum has in many instances been injected after the disease had become well established in the system of the patient. In view of the rapid absorption of the poison in these cases, and of the large uterine surface available for this purpose, the significance of such delay should not be overlooked. It is probable, too, that the disease under treatment has not always been the effect of the streptococcus alone, but primarily sapræmic, and a consequence of

putrefaction in retained coagula. It is encouraging to note that even in the treatment of puerperal cases a distinct amelioration of the symptoms, after injection, has been noticed by some French observers (Patru, Maillart, Ribemont, etc.). Boucheron³ speaks highly of his results in the treatment of purulent dacryocystitis by this method, injections of 5 c.c. repeated at intervals of a few days having a marked effect even in chronic cases of this disease. He employs the serum, also, as a preventive of possible suppuration after cataract operations. It would seem that the antitoxic power of this remedy is not great, and it may be that the secret of success in acute cases lies not only in the promptitude of its employment, but in the frequency of its application. The most that can be said so far is that past experience, though indecisive, is encouraging rather than otherwise, and lends colour to the hope that with a purer and more powerful serum better results may be expected.

Unless it be in the kingdom of the antitoxins there is no therapeutic realm in which during the last year so much progress has been made as in that of the ductless glands. Prof. H. C. Wood,⁴ of Philadelphia, in an admirable *résumé* of the whole subject, points out that the first surprising discovery of the value of the **Thyroid Body** in practical medicine has been so far confirmed and corrected by continuing experience that as a drug the gland rests upon a firm foundation of knowledge. We now know that it is a useful remedy in the treatment of myxœdema; that it is of great service in those forms of obesity in which there is a tendency to general softness and flabbiness of tissue and to lack of proper development of the blood; in other words, in the so-called "fat anæmics" of some writers. In insanity the records are, on the whole, records of failure rather than of success, and though in some instances of melancholia and other chronic insanities good is alleged to have been achieved, in general little is to be expected. In skin-diseases good results have been sometimes achieved, especially in cases in which there is large development of tissue of a low type, as in keloid, hypertrophied cicatrix, and sometimes in chronic eczema with great thickening of tissue.

Dr. R. Lépine reports a case of progressive myopathy in which the patient came into the hospital entirely incapacitated for work by the widespread muscular change. For some weeks 900 grains a day of the fresh thyroid gland were given him; at the end of that time the improvement had been so great that the man refused to stay longer in the hospital, asserting that he was able to do his work. It was noted that those muscles which had undergone complete change did not seem to be affected, but that the process appeared to have been

arrested and great improvement to have taken place in the fibres of those muscles which were in the incipency of change. It is also well established that in the true goitre of Switzerland, if the thyroid be given before calcareous degeneration has taken place, it will bring about absorption of the overgrown gland—a result which strongly contrasts with the fact that the thyroid extract usually aggravates the symptoms of exophthalmic goitre, in which disease it has marked capabilities for harm rather than for good.

The loss of weight so often produced by the ingestion of thyroid gland or its preparations indicates that that body increases tissue-waste; and experiments show that there is under the influence of the thyroid extract an increase in the output of urea. Vermeiren affirms that this increase occurs only in myxœdematous subjects and in those of advanced age, no young people in his experiments having been affected; whilst Paul Meyer failed to get any evidence of increased nitrogenous waste after the exhibition of thyroïdin. On the other hand, however, Bleibtren and Vendelstadt found in an individual case that one-sixth part of the loss of weight could be accounted for by the increased elimination of nitrogenous material, while the other five-sixths resulted from the destruction of the fat and other carbohydrates. Irsai, Vas, and Gara, in several goitrous individuals, determined that the loss of weight was accompanied by an increase in the elimination of nitrogen, phosphorus, sodium chloride, and uric acid; and in experiments upon dogs Roos, Burger, Scholz, and Treubel noticed pronounced and continuing increase in the elimination of nitrogen and of phosphorus. The elimination of chlorine has usually been at first increased, afterwards lessened.

These researches are sufficient to warrant a definite conclusion, and it would appear that the thyroid and its preparations lessen the bodily weight in part by causing a destruction of the nitrogenous tissues, but still more largely by wasting the carbohydrates of the body.

The question of the nature of the active principle of the thyroid body is one of great interest, to which only a partial answer can be given.

In 1895 Baumann announced that the physiological activity of the thyroid gland depended upon the presence of a proteid substance containing iodine, to which he gave the name of thyroïodin; a year later Gottlieb found in a series of experiments that while he could maintain the life of dogs which had suffered thyroidectomy by feeding them on the thyroid gland or giving them thyroid extract, the thyroïodin was incapable of preserving the animal's existence. The contrary result, however, reached in the experiments of Hildebrandt

and of Notkin, confirmed by the experimental and clinical evidence gathered together by E. Roos, Arthur Hennig, Treubel, Ewald, Levy, and others, confirm the statements of Baumann and seem to prove that the thyriodin is the chief active principle of the thyroid body ; but that while it is capable of saving the life after thyroidectomy, it does not put an end to the tetanoid symptoms which are often so prominent in the dog after removal of the gland, and that therefore there must be in the thyroid body some second active substance. It is possible that this second substance is the thyreo-antitoxin of Fränkel, although there is at present no proof of this, and the researches of Robert Hutchison would seem to indicate that thyreo-antitoxin is inert.

In regard to the method of administration, thyriodin is scarcely a commercial product. Thyriodin of Merck's "Index" and of the German writers is nothing more than the dried thyroid gland of the ox. It certainly is efficient, and, as the dose is only 5 grains, can be used in capsules, three to five doses in the twenty-four hours. If in any case the symptoms of thyroidism—*i.e.*, nervousness, shortness of breath, rapid pulse, or other physiological symptoms—appear, the daily dose should be reduced. (See also "Thyroid Medication," p. 62).

Concerning the medical value of the **Thymus Gland** we have little or no knowledge, except that the first statements as to its value in exophthalmic goitre have not been borne out by more recent clinical studies.

The fact that the **Pituitary Body** is often diseased in cases of acromegaly suggests that it belongs to the ductless glands and has widespread relations to the general nutrition which might be availed of in the treatment of disease. On the other hand, however, so many cases of acromegaly without recognizable disease of the pituitary gland, and so many cases of disease of the pituitary gland without acromegaly, have been reported, that at present it is doubtful whether the connection between this body and acromegaly is more than coincidence. There is at present no clinical evidence that the pituitary body has therapeutic value ; but it is interesting to note that the experiments of Oliver and Schäfer indicate that there is similarity or resemblance of function between it and the suprarenal capsules, at least in so far that its extract, when given intravenously to the dog, produces a rise of the blood-pressure, which Oliver and Schäfer believe to be the outcome of contraction of the arterioles.

During the last year or two much work has been performed for the determination of the function of the **Suprarenal Capsules** and of their

possible use in therapeutics. It is not yet settled whether or not they contain a true active principle, much less what that active principle is. They certainly contain some toxic substance, but the question now pressing for solution is : Is this toxic principle produced by the gland, or is it only filtered, as it were, out of the blood and accumulated in the gland ?

It is established that the adrenals contain neurin, and that this substance appears in the urine of patients suffering from Addison's disease. Two views not necessarily antagonistic or incompatible have been held about this matter ; one that of Marino-Zuco and Guaruceri that the active toxic agent of the gland is neurin ; the other that of Albanèse, who believes that the function of the gland is to destroy or overcome the poisonous effects of neurin. The latter view has been especially combated by E. Boinet, but is not improbable.

Addison's disease, so-called, is probably not a single disease, but a group of diseases. Cancerous destruction of the suprarenal capsule may lead to the same symptoms, so far as the general system is concerned, as does tuberculous destruction of the glands. In any individual case of Addison's disease the ultimate value of the treatment must depend upon the nature of the suprarenal lesion, whether it be one capable of invading the surrounding region and finally killing entirely, independently of any function of the suprarenal ; or, whether it be the expression of a widespread systemic vice, which will manifest itself by-and-by in other parts of the body ; or whether it be a simple change in the glands themselves, like a sclerosis, local in its character, of no significance save only as it affects the functions of the gland. The suprarenal treatment of Addison's disease only supplies the loss to the body of the functional activity of the glands, and it can have no effect upon the local lesion in the gland or upon a systemic vice which has produced that local lesion.

In regard to the dosage and method of administration it should be noted that the suprarenal gland appears to be a very active body. According to Oliver, it loses about four-fifths of its weight in drying, so that the so-called "extracts of dried gland" represent five times its weight of the fresh gland. Oliver and Schäfer found that of this extract 0.0037 gramme would produce the maximum effect in elevating the arterial pressure in a dog weighing 10 kilogrammes. Oliver puts the dose of the extract as 3 to 5 grains three times a day.

So far we have no knowledge of any systemic condition produced by exhibiting the gland freely, parallel to thyroidism—which is interesting in the face of the fact that Oliver has given 120 grains of the dried (600 grains of the fresh) gland daily for a week.

Szymonowicz and Cybulski affirm, first, that after section of the cord the extract is incapable of producing rise of blood-pressure; second, that the circulatory and respiratory changes produced in the normal animal by deprivation of oxygen do not occur in animals whose suprarenal capsules have been removed a few hours previously. Oliver and Schäfer, as the result of their experiments, deny the correctness of each of these statements. They believe that the results obtained by Cybulski (second statement) were due to the remaining presence of shock from the operation. An important observation by Cybulski is that the blood of the suprarenal vein contains a notable amount of the toxic principle of the gland.

Toxic doses of the extract cause, in the frog, progressively increasing loss of power without a true paralysis, and death apparently through an asthenic failure of respiration; in mammals a rapid and extreme enfeeblement, with failure of respiration and also of the circulation, consciousness being preserved very late in the poisoning. The death is apparently by asthenic failure of respiration, though when this function is artificially maintained there is finally loss of heart-power, with paralysis of the vagus nerve (Gourfein). No lesion except pulmonary congestion has been discovered after death. Gourfein, Oliver, and Schäfer find that the nerve-trunks and muscles preserve their activity to the end, so that the loss of power is not of peripheral origin.

It is evident that in the present state of our knowledge the only use of the suprarenal capsules in medicine which can be considered to rest upon the foundation of scientific rationalism is in Addison's disease, and even that is very doubtful. If, however, Oliver and Schäfer are correct in their physiological conclusion, that some principle produced by the suprarenal capsule is the most powerful local known substance as a stimulant to the muscle-walls of the arterioles, it is possible that future experience may show that the suggestions of Oliver have practical value. These suggestions are that the suprarenal capsules will be useful in all forms of asthenia and anæmia in which there is very great loss of the general vaso-motor tone. It is also claimed by Oliver that in anæmia there is sometimes a sharp rise in the percentage of hæmoglobin during suprarenal treatment, although it seems as yet entirely uncertain whether this ever occurs in those fatal anæmias which are grouped under the name of pernicious anæmias. The profound anæmia of Addison's disease would, however, indicate that possibly the suprarenal capsules may have some relations with the blood-making organs. Oliver's trials with it in diabetes mellitus and diabetes insipidus do not indicate that the drug has any value in these affections.

The enlargement of the spleen which occurs in myxœdema, cretinism, and after excision of the thyroid body, suggests that there is a relation between the two organs, although we have no light as to the nature of the relation and whether the splenic enlargement is due to an attempt at functional replacment of the excised or diseased thyroid, or whether it is the outcome of irritation by the presence of materials in the blood which should have been removed by the thyroid gland ; or, indeed, whether it be not the result of an irritation produced by the absence of some principle made in the thyroid whose presence is necessary to the healthful life of the spleen. The intravenous injection of the **Splenic Extract** into the dog causes an immediate fall of the arterial pressure, followed by a pronounced and continuing rise, showing that the extract is not an inert body.

In using the extract of any of the ductless glands it must always be remembered that, if any good is achieved, it is probably the result of an addition of certain substances to the body which are normally formed in the body in sufficient quantity for its needs, but which, through accident or disease, the system has failed to supply itself with. It follows that there are usually two stages in the treatment of such a case ; the first, in which the material must be given largely to put an end to the results of its long-continued absence ; the second, in which the substance must be given in small doses to maintain the balance of function which has been restored. Thus, in myxœdema, for the first months or years thyroid extract should be given in as large doses as the patient can bear ; afterward, when the myxœdematous condition has subsided, the gland must be given continually in small doses, probably during the whole life.

Koch⁵ has introduced a new **Tuberculin** which seems well adapted for clinical use. It is now more than five years since Koch announced the discovery of a new treatment of tuberculosis, and the medical world was inspired with a hope that at length one of the most widespread and dreaded of diseases might be successfully combated. This hope was destined to be destroyed, and tuberculin was abandoned as an agent, if not positively harmful, at least incapable of effecting the good claimed for it. The reaction against it was probably excessive ; and, indeed, from time to time, even down to the present day, series of cases have been put on record in which the remedy, judiciously used, has been shown to produce considerable amelioration. Koch, in a recent paper, expresses the opinion that, apart from his newer preparations, tuberculin is still the best remedy available against tuberculosis. Undoubtedly it has obtained for itself a permanent position in veterinary practice as a means of recognizing concealed

tuberculosis. Koch lays much stress on the fact that all bacteriological treatment must rest upon immunity, and in the particular question of tuberculosis the difficulty of inducing immunity constitutes the crux of the problem of successful bacteriological treatment. Treatment by tuberculin differs from serum-therapy, where immunity is conferred on man by the injection of serum of a highly artificially immunized animal, the patient escaping the risks attendant upon the actual development of immunization in his own body.

Koch and his assistants have incessantly laboured to improve tuberculin. The new preparations consist of tuberculins A, O, and R, the last-named being the one actually recommended for clinical use. Tuberculin A, obtained by extraction from tubercle bacilli by means of one-tenth normal soda solution, acts much in the same way as ordinary tuberculin, but the reaction is more intense and the patient takes more time to become accustomed to or immunized against its action. Tuberculin O and R are prepared by vigorously pounding in a mortar dried cultures of the tubercle bacillus, and then adding distilled water. The whole is centrifugalized in a powerful machine. The clear but opalescent liquid collecting at the top contains no tubercle bacilli, and constitutes in the first centrifugalization tuberculin O. The remainder, containing the *débris* of the tubercle bacilli, forms tuberculin R. This remainder is dried and pounded, distilled water is added, and the whole again centrifugalized. This process is repeated until hardly any residue remains. To both preparations 20 per cent. glycerine is then added to ensure their preservation. The dose is 1-500 mgr. gradually increased up to 20 mgr.

The most important part of Koch's communication lies in the results obtained, and these include both the effects noted upon tuberculous lesions in animals and clinical observations in man.⁶ No ill effects of any kind were produced. No reaction is required, and hence one of the most serious objections to tuberculin is removed. The clinical results are decidedly encouraging. With the caution displayed in earlier communications by Koch, but not always by his followers, "improvement" is spoken of, for the patients have not been under observation long enough to warrant the term "cure."

There are two conditions upon which successful bacteriological treatment must depend, and they are (1) early treatment, based on correct diagnosis; and (2) in serum-therapy, the administration, when required, of large doses of the serum. It not infrequently happens that a neglect of these two points has brought discredit on the serum treatment apart from the question of constant strength. Koch gives grounds for hoping that as a result of his experiments

tuberculin R may eventually form the basis of a strictly serum treatment.

A brief reference must be made to other important events of the year in the direction of therapeutic investigation.

An important paper has been published by Dr. C. R. Marshall, of Cambridge, on the physiological action of **Cannabinol**, a toxic red oil or resin obtained from *Cannabis Indica*. An abstract of this paper is given (page 24).

Dr. Weir Mitchell's attempt to popularize the Mescal Button (*Anhalonium Lewinii*) has been attended with but little success, although its active principle, **Pellotine**, has attracted some attention (page 44).

Eucaïne is steadily advancing in favour, and there is good reason for believing that eucaïne B is a much more useful product than the eucaïne A originally introduced (page 30).

Holocain is still on its trial, but judging from the communications received may have a future before it (page 35).

Scopolamine is coming largely into use, and is employed in cases of iritis where atropine causes irritation. The fact that a drop of 1 in 3,000 aqueous solution of the hydrobromate dilates the pupil fully in fifteen minutes is distinctly in its favour. In connection with the subject of mydriatic alkaloids attention may be called to a series of valuable papers published in the "Med. Brief" by Mr. G. Hartridge (page 58).

Amongst hypnotics **Trional** has attained a valuable position. It acts much more promptly than sulphonal, although its effects pass off much more quickly (page 65). A mixture of trional and sulphonal is frequently prescribed for sea sickness.

Erythrol Tetranitrate has been advocated in high arterial tension, but seems to have no advantage over the more popular nitroglycerine.

The want of a good diuretic is still acutely felt, and the popularity of the caffeine preparations and their allies is distinctly on the wane. Whether **Urea** will ultimately take their place remains to be seen. There is no doubt as to its activity and that no bad effects follow the administration even in large doses.⁷

Formic Aldehyde is described as the ideal germicide deodorant and antizymotic. A 40 per cent. solution is useful in cases of chancre and chancroid, and is said to be the best of all applications. This, however, produces a good deal of smarting, and it is better to begin with a weaker solution. It is at the present moment the most popular of all antiseptics, and threatens to supersede for this purpose perchloride of mercury.

REFERENCES.—¹“Brit. Med. Journ.,” July 10, 1897; ²“Lancet,” Jan. 9, 1897, “Med. Chron.,” Feb., 1897; ³“Presse méd.,” Nov. 18, 1896; ⁴“Amer. Journ. Med. Sci.,” May, 1897; ⁵“Deut. med. Woch.,” April 1, 1897; ⁶“Brit. Med. Journ.,” April 10, 1897; ⁷“Med. Ann.,” 1897, p. 87.

ACONITE.

Dr. Murrell¹ finds aconite useful as an *external application* in the treatment of **Myalgia, Neuralgia, Rheumatism** and other painful affections. A combination often employed is the following :—

R	Tincture of Aconite	℥j	Glycerine	℥j
	Essential Oil of Mustard	℥j	Rectified Spirit, ad	℥vj

Two teaspoonfuls should be rubbed into the affected part night and morning.

The following liniment is still more efficacious :—

R	Tincture of Aconite	℥j	Oil of Cajeput	℥ij
	Camphor	℥ij	Tincture of Capsicum	℥ij
	Chloroform	℥ij	Rectified Spirit, ad	℥vj

It may, if thought desirable, be scented with oil of origanum.

REFERENCE.—¹“Med. Brief,” March, 1897.

AIROL.

Favourable reports continue to be received respecting the value of this drug as a substitute for iodoform. Tausig¹ gives his experiences with airoil as follows : In two cases of **Whitlow**, both showed a marked diminution in secretion. In five of **Boils**, the discharge ceased in two days; cure was complete in five at longest. In one of **Carbuncle**, with redundant granulations after incision, under treatment with airoil these were replaced by healthy granulations in four days, and cicatrization was complete in eight. In two chronic **Ulcers** of the foot, healing was within a week. In one case of **Otitis Media**, discharge disappeared in four days. In two of **Soft Sore**, cure resulted in five days. The author calls attention to the value of a 10 per cent. emulsion of airoil in glycerine as an injection in gonorrhœa. He has used this in three cases of acute and three of chronic gonorrhœa, all of which have recovered within ten to fourteen days after 3 to 10 injections, never repeated more often than once daily. In **Trachoma** the powder is valuable, when dusted on after the instillation of cocaine, to prevent smarting. In four cases the trachomatous conjunctivitis disappeared in three days; in one of them the granules also vanished in twelve days, but in the others these were not benefited. No toxic effects were observed.

Carl S. Haegeler,² of Basel, points out that any effort to discuss a new substitute for iodoform is met with scepticism, for there have been

many announced which have failed in their purpose. The chief objections to iodoform are: (1,) Its toxic action; (2,) The fact that it frequently acts as an irritant to the skin; and (3,) Its disagreeable odour. Despite the many articles which have been written, its exact action is unknown. We know that it is not an antiseptic, and that wounds can be infected by the use of non-sterile iodoform. It undoubtedly acts through its products of decomposition, the principal one of which is iodine. Whether it acts upon the micro-organisms, their toxins, or upon the tissues is unknown. Where putrefaction is taking place it is readily decomposed. Its anti-tuberculous action is also clearly established, whether by acting upon the bacilli or by modifying the tuberculous tissue is also unknown. What we demand of a substitute for iodoform is: (1,) It shall not be as toxic; (2,) It shall not have any odour; (3,) It shall not irritate the skin; (4,) It shall contain a sufficient quantity of iodine or a similar effective antiseptic, which it can part with under the same conditions as iodoform. Iodol and aristol do not fulfil these. Dermatol has but a feeble antiseptic action, and has its principal use in dermatological practice on account of the bismuth it contains.

Lüdy introduced iodine into the combination of gallic acid and bismuth, of which dermatol is composed, and produced airol. This substance rapidly gives up its iodine, when introduced into wounds, through the action of the temperature of the body. It contains bismuth, and thus acts as a desiccant. In the treatment of **Furuncles** and **Carbuncles**, it is used in the form of gauze (10 per cent.) impregnated with the powder. In **Erysipelas** the liberation of iodine cannot keep pace with the advance of micro-organisms along the lymph-vessels, and hence it is of no value. In **Phlegmonous Inflammations** caused by streptococci it is specially useful. In dressing **Recent Injuries** its mild antiseptic action is of great value. It stimulates granulations, and can be used in combination with sterile wet dressings in the form of a powder in the treatment of **Acute Phlegmons**. For injecting **Tubercular Joints** the author uses a 10 per cent. emulsion, and has noticed an action upon these tissues similar to that of iodoform.

REFERENCES.—¹ "Wien. med. Presse," Oct., 11, 1896; for origin, composition, and properties of the drug see "Med. Ann.," 1897, p. 17; ² "Beitr. z. klin. Chir.," Band xv, Heft 1, p. 266.

ANARCOTINE.

Dr. Nusserwanji Surveyor has made an interesting study into the pharmacological action of this drug, which at one time was largely employed in India in the treatment of **Malaria** and for its anti-periodic effects.

Experiments were undertaken with the view of determining the effect of this drug in diminishing or increasing metabolic changes in dogs. Blood-pressure experiments were also performed on dogs. It was found that a subcutaneous dose of the chloride of anarcotine, even to the extent of 4 grammes, had no effect on the blood pressure or the heart. The respiratory movements of the animals were not altered. Respiratory changes of gases before, during, and after injection of the chloride were studied in mice. It was found that a subcutaneous injection of 0·016 gramme of anarcotine chloride per body-weight of 100 grammes produced diminution of the amount of carbonic acid given off by the animal; the amount of oxygen absorbed was also slightly diminished. The respiratory ratio was not altered. The animals lost weight during administration of the drug, but this was soon regained on stopping it.

Administration of pure anarcotine to dogs in doses of 1 gramme produced vomiting within half an hour. The smallest dose required to produce this effect was 0·5 gramme per body-weight of 5 kilogrammes.

Anarcotine chloride (1 gramme) produced retching in one dog, while subcutaneous injection of the salt up to 4 grammes in an anæsthetized animal produced no effect.

It is curious that a perfectly tasteless alkaloid like anarcotine should produce vomiting, while its chloride, which is extremely bitter in taste, is tolerated.

The chloride was prepared from the alkaloid by the action of hydrochloric acid. The resulting salt was dissolved in distilled water, filtered, evaporated down to dryness, dissolved in chloroform, and crystallized out from the chloroform solution by the addition of anhydrous ether. The crystals were redissolved and recrystallized salt used for the experiments.

As regards the effect of the alkaloid on metabolism, difficulty was met with in the matter of diet. Some dogs refused to take the ordinary dried meat, so it was ultimately decided to feed them on sterilized meat. Minced meat was weighed in small beakers, and these sterilized at 120° C. in the autoclave. It was found that during administration of the drug the animals lost weight; the nitrogen absorbed was diminished, and in one case it fell to one-third. The amount of fat absorbed was also diminished.

The water excreted as urine was as a rule increased, and on some occasions it was found that the total amount of water excreted both as urine and in fæces was in excess of the amount taken on the corresponding day. There was a slight diminution in the amount of nitrogen excreted by the kidneys

The metabolic changes after the administration of hydrochlorate of morphine were studied in one dog. The dose given was 0.05 gramme to 0.02 gramme per 5 kilogrammes of body-weight. The animal was restless; it took little food, and lost weight; the amount of weight lost, however, did not correspond to the nitrogen and fat excreted during the same period. Although little food was taken, the weight lost was not considerable. This is accounted for by the fact that the amount of nitrogen excreted by the kidneys was to a great extent diminished.

REFERENCE.—“*Brit. Med. Journ.*,” Sept. 26, 1896.

ANHALONIUM LEWINII (Mescal Button). (See also “*Pellotine*.”)

Dr. Weir Mitchell¹ in a paper read before the American Neurological Society confirms the observations of Prentiss and Morgan² respecting the action of this drug in producing Mescal intoxication.

Observations made in this country with a tincture of anhalonium Lewinii failed to confirm Mitchell's observations. The tincture was of the strength that each sixteen fluid ounces represented two ounces of the drug. Even with large doses the drug was apparently inert. The reports received by a large wholesale house were so unsatisfactory that they at once withdrew it from their list.

REFERENCES.—¹ “*Brit. Med. Journ.*,” Dec. 5, 1896; ² “*Med. Ann.*,” 1896, p. 18.

ANTICARCINOMATOUS SERUM.

Dubois¹ injected animals hypodermically with material obtained by harpooning fragments of human carcinomata and mashing them up, the object being to influence the organism by the inoculated cancerous elements, so as to obtain an anticarcinomatous serum. As a result several tumours appeared in the animals, the largest of which weighed more than 20 ounces. Three cases were treated by the serum: (1.) A non-ulcerated **Cancer of the Breast** was almost completely cured after forty-five days' treatment, the tumour atrophying and being transformed into a fibrous nodule; (2.) An **Epithelioma** of the forehead had greatly diminished after thirty-five days. In these two cases 2 to 3 c.cm. of serum were injected every other day near the tumour, a few drops of slightly iodized alcohol being injected into the tumour itself; (3.) A recurrent ulcerated fungating epithelioma of the upper lip had its progress arrested after twenty-three days' treatment, but there was no tendency to cure. The action of the serum is to induce a fibrous metamorphosis, and is most certain when used early in the case. Its use is not dangerous except in very advanced cases.

REFERENCES.—¹ “*Rev. méd. de l'est.*,” Feb. 1, 1897; “*Brit. Med. Journ.*,” May 15, 1897.

APOLYSIN.

This drug is allied in physiological action to phenacetin. It is a yellowish white crystalline powder, soluble in water, in glycerine, and in alcohol. The usual dose is $\frac{1}{2}$ a drachm. It is largely used in the treatment of **Neuralgia** and some account of its action and uses will be found in the "Medical Annual," 1897, p. 23.

G. Grief¹ gives the results of his observations in the employment of the drug in sixty-four cases of **Hemicrania**. When the drug was given during the aura, 15 to 30 grains were sufficient. When treatment was commenced after the attack had begun, as was the case with most of the cases, in only eight was one powder sufficient to cut short the attack. In the majority of the cases, 30 grains were required.

The intervals between the attacks increased in length under the apolysin treatment, and cases that at first required 45 grains did well with 30 grains, or even 15 grains, in subsequent attacks.

Apolysin was also used in cases of **Hemicrania Spastica**, **Hemicrania Angio-paralytica**, and **Infra-orbital Neuralgia**, and in fifty-five cases of **Epidemic Influenza**, in all of which the results were good.

The following conclusions were arrived at : Apolysin is well borne, even in large doses and for long periods of time ; patients take it willingly ; the intestinal tract is not irritated by the continuous ingestion of large quantities of the drug ; the urine remains normal during its exhibition ; it causes no other disturbances, and it has no cumulative or poisonous effects.

REFERENCE.—¹ "Deut. med. Woch.," 1896, xxi., 32.

ARECOLINE.

Lavagna¹ has employed arecoline, an alkaloid found in the areca nut, in **Ophthalmic Practice**, and has found that it causes decided contraction of the pupil. He has used an aqueous solution of the hydrobromide, but the strength of the solution is not stated.

REFERENCES.—¹ "Boll. d. Acad. di Medi. di Torina"; "Deut. Med. Zeit.," Nov. 23, 1896.

ARROW POISONS.

Leubuscher,¹ of Jena, has examined a small quantity of an arrow poison brought from Borneo by Professor Kükenthal. It had been prepared in Long Mari, a village on the northern coast of Borneo, on the Baram River, about two hundred English miles from the mouth of that stream. The warrior who had given the specimen to Kükenthal had told him that it was effective only when it was fresh, but had given him no information as to its source, save that it proceeded from a tree concerning which the natives related that the rhinoceros fed

on its leaves with impunity, but that, if the beast's dung happened to fall into the water, the fish in the immediate neighbourhood became stupefied.

Leubuscher mentions some of the difficulties that beset the investigation of arrow poisons, but adds that, in spite of them, the examination has something more than a theoretical and scientific interest. He mentions as an example the case of strophanthin, found in an arrow poison of eastern Africa, but now regularly employed in heart diseases. As regards the Borneo specimen, it consisted of about 25 grains of a dry, blackish-brown mass, structureless as examined with the microscope, except that through the black substance ran yellowish streaks here and there, and minute fat globules were to be seen in certain parts of the field.

Chemically, this substance does not contain a glucoside, but possibly it contains an alkaloid in combination with an acid.

The author has examined its physiological action on frogs, rabbits, and fishes. He injected a small quantity of a freshly prepared solution beneath the skin of a large frog, *Rana temporaria*, and for a few minutes there was no apparent effect. In from eight to ten minutes, however, the animal's movements were perceived to be more sluggish; it lay with its hind legs stretched out at full length, and weak clonic contractions of the muscles of the thigh took place. Irritation gave rise to brisk movements, and there were at no time any phenomena of paralysis. Within two minutes more the frog was dead. Its heart was found pale, bloodless, and firmly contracted in systole. A minute amount of the poison, about 0.077 of a grain, was injected into a medium-sized rabbit. In the course of twelve minutes the animal became restless; then a few gasps followed and it was dead. In this instance, too, the heart was found contracted, but the systole was not so pronounced as in the case of the frog.

Proceeding to a closer study of the poison in its action on the heart, Leubuscher exposed the organ in a frog and injected a small quantity of the material under investigation. After a time irregularity of the heart's action was manifest; it seemed as if the blood from the auricles met with difficulty in distending the ventricles. Slowly but powerfully the ventricular wall contracted, and by its slowness the diastole was prolonged. Then arose an irregularity in the contraction of individual portions of the ventricle; sometimes only the apex contracted, and again only the base; the impression was as if peristaltic waves coursed through the muscular structure of the organ. A constantly decreasing part of the cardiac chambers became distended in the diastole, and finally the ventricles stopped in systole, pale,

bloodless, and firmly contracted. No irritation could provoke any cardiac movement. The swelling auricles pulsated for a few seconds, and then they, too, were still.

In order to make a more accurate study of the effects on the heart in warm-blooded animals, the author connected a manometer with one carotid of a curarized animal, presumably a rabbit, so that the cardiac movements would be indicated on a rotating tympanum, and a cannula was inserted into the trachea which was to record the respiratory movements on the same strip of paper. Thus the various phases of the poisonous action could be followed. It was observed that in a short time after the injection of the poison the action of the heart became irregular, and that the irregularity increased more and more and was accompanied by a lowering of the blood-pressure which persisted until death took place. No increase of the blood-pressure was observed in any of the experiments, even when the action of the poison was prolonged by reason of its having been given in very small doses. In the early stage there was no acceleration of the heart's action, and subsequently the irregularity made it impossible to make satisfactory observations in regard to this point. The poison seemed to have no direct action on the respiration or on the peripheral nerves and muscles. Its effects on the heart were in no wise modified by section of the vagi or the use of atropine; it is therefore highly probable that the action of the poison is exerted directly on the organ, and not through the medium of the vagi.

The author's experiments on fishes proved harmless to those animals; from this he concludes that this arrow poison contains no derrid, the poisonous principle of *Derris elliptica*, and therefore is probably not identical with the "ipoh," or "siren," described by Lewin as a Borneo arrow poison.

REFERENCES.—¹"Centralbl. f. inn. Med.," Jan. 25, 1896, and "New York Med. Journ.," Feb. 29, 1896.

ARSENIC.

Although arsenic is an active toxic agent children tolerate it better than adults, and when the remedy is clearly indicated we should use it boldly. In therapeutic doses it facilitates respiration, improves the circulation, and increases the urinary, salivary, biliary, and cutaneous secretions. It is eliminated chiefly by the urine, and easily diffuses through the whole organism, especially showing a preference for the liver.

Rarely prescribed before the age of two or three years, we may, however, have recourse to it even in a nursling who has **Asthma, Pulmonary Tuberculosis, Leukæmia, or Pseudo-leukæmia, or Chronic Malarial Affections**, hereditary or acquired.

In older children the indications for arsenic become more numerous. In obstinate **Malarial Fevers** with marked anæmia, enlarged spleen, cachexia, etc., Boudin employed large doses with great success. When quinine fails, we may use the official preparations or arsenical waters. In **Tuberculosis**, arsenic stimulates the appetite, favouring increase of weight, and assisting respiration.

Pernicious Anæmia, Leucocythæmia, and Pseudo-Leucocythæmia—diseases showing profound alterations of the blood—must be treated with arsenic.

All the **Anæmias**—**Chlorosis, Lymphatic Anæmia, Dyspeptic Anæmia**, and the anæmia of growth, do well with a moderate arsenic treatment.

Scrofula and scrofulous conditions, **Adenitis, Chronic Scrofulous Eczema**, some **Arthritic Manifestations, Asthma**, and progressive **Chronic Rheumatism** should be treated with arsenic. All the **Malignant Tumours** of childhood are favourably influenced by this drug.

In diseases of the nervous system, **Epilepsy, Hysteria**, and **Chorea**, arsenic has been advised; we should not hesitate to push the drug to the limits of tolerance.

Arsenic acts well in asthma, pulmonary tuberculosis, **Chronic Bronchitis** with or without emphysema, in **Creeping Bronchopneumonia**, and in the lung affections following whooping-cough and measles.

Acute affections of the skin, erythemas, acute eczemas, urticaria and prurigo, do not do well under arsenic. But on the other hand, in **Chronic Scrofulous Eczemas, Lichen, Psoriasis, Furunculosis, Acne**, etc., arsenic is perfectly suitable.¹

Speaking of the therapeutical applications of arsenic Dr. Murrell² says: "In **Spasmodic Asthma** the patient should not only take arsenic but should smoke arsenic cigarettes. The ordinary arsenical cigarette is made by saturating paper with a solution containing 15 grains of the arsenite of potassium in an ounce of water. A common tobacco cigarette may usually be converted into an arsenical cigarette by rubbing it over the arsenically coloured wrapper in which they are sold. In obstinate cases of asthma the cigarette paper may be dipped in Fowler's solution, or in a mixture of Fowler's solution, tincture of lobelia, tincture of cannabis indica and tincture of stramonium. The portion of the paper which comes in contact with the lips should not be impregnated, or better still, a mouth-piece should be used. In addition to smoking these cigarettes the patient should use this fuming inhalation at bedtime:—

R.	Powd. Anise Fruit	ʒj	Powd. Stramonium Leaves	ʒij
	Powd. Fennel Fruit	ʒss	Iodide of Potassium	ʒj
	Powd. Sumbul Root	ʒij	Powd. Nitre	ʒij

"The ingredients should be perfectly dry and should be intimately mixed. A tablespoonful should be ignited and the fumes inhaled.

"Arsenic is of much value in the attacks of **Paroxysmal Sneezing** accompanied with running from the eyes and nose from which many people suffer, a condition probably due to an over-excitable condition of the centre for sneezing. A drop of Fowler's solution every four hours will usually speedily effect a cure. In cases of true **Hay Fever** due to the presence of pollen it is of value, but more benefit is often derived from injecting into the nostrils a 1 per cent. solution of cocaine or, better still, of the new synthetic alkaloid eucaine. Sometimes the patient prefers an inhalation, and he then resorts to the following formula :—

R̄ Menthol	gr. viii	Oil of Cassia	℥ iii
Chloroformi	℥ v	Light Carb. of Magnesium	gr. xx
Benzol	℥ xx	Water ad	℥ j

"The active ingredients are first incorporated with the carbonate of magnesium, and the water is then added. A teaspoonful is poured into a pint of hot water at a temperature of 140° F., and the vapour is slowly inhaled for ten minutes."

REFERENCES.—¹ "Bull. gén. de thérap.," Dec. 15, 1896; "Med. Chron.," Feb., 1897; ² "Med. Brief," April, 1897.

ATROPINE.

Mr. Gustavus Hartridge,¹ ophthalmic surgeon to the Westminster Hospital, makes some valuable remarks on the use of atropine in **Iritis**. He points out that in iritis this drug is invaluable, but it must be borne in mind that, owing to the inflammatory condition of the eye, absorption is slow, and, therefore, it is necessary to use very strong solutions, especially in those cases where adhesions have already formed between the posterior surface of the iris and the lens. An excellent combination in these cases is :—

R̄ Atropine	gr. viii	Vaseline	℥ j
Cocaine	gr. x		

Heat the vaseline over a water bath, then stir in the alkaloids, which are freely soluble in this medium; when cool the ointment is ready for use, and should be kept constantly applied over the lids of the inflamed eye, by spreading it thickly on a small circular piece of lint and keeping this in position with a little cotton wool and a bandage or a shade; the wool is necessary to keep the eye at an equable temperature. In addition to this a small piece of the ointment about as large as a small pea should be inserted between the lids with a camel's hair brush every four or five hours.

When it is preferred to use an aqueous solution the following formula will be found to act well :—

R _x Atrop. Sulphatis	gr. viii	Sodæ Salicylat.	gr. ii
Cocaine Hydrochlor.	gr. x	Aquæ ad	ʒj
	Ft. guttæ.		

One or two drops are applied (four times at an interval of two minutes) three times a day. The objects we wish to attain are : (1,) To dilate the pupil ; (2,) Empty the iritic vessels which are engorged ; (3,) Tear away any adhesions that have already taken place between the iris and lens, besides placing the eye in a state of rest. In acute cases where the drug appears to produce little effect, the application of a couple of leeches to the temple will assist the absorption of the drugs.

Atropine appears to act by passing through the cornea into the aqueous chamber ; the younger the subject and the thinner the cornea the more quickly are the effects produced. That the drug does actually reach the anterior chamber was incontestably proved by the experiment of thoroughly atropizing the eye of a rabbit. The conjunctival sac was afterwards well washed out with water and then paracentesis of the anterior chamber performed ; when some of the aqueous thus let out was placed in the conjunctival sac of a dog, dilatation was quickly produced.

This experiment was repeated in a case in which the drug was administered internally until dilatation of the pupil took place ; the aqueous in this case produced no effect when introduced into a dog's eye.

Atropine appears to act directly upon the nerve endings of those branches of the third nerve which supply the sphincter pupillæ and the ciliary muscle. But we must also admit that some stimulation of the sympathetic is produced at the same time, because in cases of complete paralysis of the third nerve atropine produces still further dilatation ; while in cases of paralysis of the sympathetic, dilatation takes place slowly and incompletely.

REFERENCE.—¹ "Med. Brief," June, 1897.

BENZO-IODHYDRIN.

Chenal¹ suggests this ether of glycerine as a substitute for iodide of potassium. It is prepared by shaking a mixture of benzoyl-iodide and epichlorhydrin, at a heat not exceeding 158° F.; the resulting brown fatty mass, a benzo-chlorhydroiodhydrin, is soluble in ether, alcohol, and petroleum oils, but not in glycerine. Administered in doses of 0.13 gr. (corresponding to 1 gr. KI), he found that it caused no disagreeable symptoms of iodism ; and from twelve observations

he concludes that its immediate therapeutic effects are equal to those of the potash salt, while it is more slowly eliminated, and a smaller dose is required. He attaches much weight to the antiseptic action of the considerable proportion of benzoic acid and chlorine contained in the drug, but admits that the question as to the permanence of the results requires more prolonged observation.

REFERENCE.—¹“Thèse de Paris,” No. 52, 1897.

BENZOSOL.

Benzosol is a pinkish, finely granular powder, devoid of taste and odour. It contains 54 per cent. of guaiacol, is insoluble in the usual solvents, and is administered in the form of powder, or pills, or in capsules. It passes unchanged through the stomach, and is split into its component parts (benzoic acid and guaiacol) by the alkaline intestinal juices. No unpleasant eructations occur, such as are caused by the administration of pure guaiacol, and the guaiacol is liberated where its antiseptic, antifermentative action is specially desired.

Benzosol is retained even by a sensitive stomach, and its dose can be steadily increased. The best results have been obtained in incipient **Pulmonary Tuberculosis**, **Chronic Bronchitis**, **Tubercular Diarrhœa**, **Chronic Gastric Catarrh**, **Intestinal Catarrh** with flatulence, and **Typhoid Fever**.

J. V. Kofron¹ finds that in incipient **Tubercular Phthisis**, 4 grains of benzosol given four times a day serve to relieve the cough, reduce expectoration, lower the hectic temperature, clear the tongue, and increase appetite. In chronic bronchitis accompanied by severe cough, profuse expectoration, and dyspeptic symptoms, similar results were obtained.

Benzosol has an almost specific effect in the treatment of tubercular diarrhœa, in doses of 1 drachm every four hours. Its use is also indicated in **Chronic Gastric Catarrh**. It also speedily and effectually checks the undue fermentation in **Intestinal Catarrh** with flatulency, and acts as a valuable intestinal antiseptic in the treatment of **Typhoid Fever**. It has also been used in **Diabetes Mellitus**.²

The writer concludes that this remedy is a valuable substitute for creasote in pulmonary affections, a safe and efficient intestinal antiseptic for the treatment of gastro-intestinal disorders attended with fermentation, and a useful remedy for sterilizing the bowel in typhoid fever.

REFERENCES.—¹“Therap. Prog.,” August, 1896; ²“Med. Ann.,” 1896, p. 212.

BISMUTH PREPARATIONS.

Dr. Reynold W. Wilcox¹ publishes the results of his investigations of some definite chemical compounds of bismuth with phenol, naphthol, and tribromophenol. He finds bismuth naphtholate (bismuth oxide 80 per cent., and beta-naphthol 20 per cent.) of the greatest value.

If Jasenski's experiments in Nencke's laboratory are trustworthy, this preparation is decidedly antiseptic; clinical experience confirms this. The drug is partly decomposed in the stomach, but the process is completed in the small intestine. The author believes the naphthol is partly eliminated by the kidneys, but the larger portion passes by the bowels. The bismuth is eliminated by the bowels as sulphide.

In a severe case of **Intestinal Putrefaction**, the drug gave great relief, limiting the tympanites, removing the offensive odour, and improving nutrition.

Of typhoid fever patients coming under this treatment during the first week or ten days of their illness, none presented the classical symptoms; all had low temperature without marked abdominal symptoms and without diarrhœa, fœtor, or tympanites. The author thinks there was no fear of perforating ulceration, for there is but little opportunity for ulceration in a bowel in which there is no fermentation going on.

The author has also used bismuth tribromophenolate, but not so extensively as the naphtholate, though its sweetness and astringency are of advantage. He has found it useful in cases of **Gastric Fermentation**. He has never observed toxic symptoms from either of these drugs, though he has administered as much as 90 to 120 grains daily. He attributes this harmlessness to a slow decomposition and setting free of the phenol.

In the **Diarrhœa of Pulmonary Tuberculosis** the author has had brilliant results in several cases by the use of bismuth naphtholate in doses rapidly increasing to 60 or even 120 grains daily. In one case, however, it was a failure, but in this instance all other remedies were equally futile. During the past year the author has employed in thirty-five patients the drug chemically known as bismuth tetra-iodo-phenol-phthaleinate (endoxine). This is an insoluble, reddish-brown, odourless, tasteless powder, which contains 52.9 per cent. of iodine, and 14.5 per cent. of bismuth. It is non-toxic, and is supposed to pass through the stomach unchanged, and to decompose in the alkaline contents of the intestine into bismuth iodide and tetra-iodo-phthalein, the last-named substance being soluble in the intestinal contents. The author obtained relief by the use of this drug in four cases of simple **Intestinal Fermentation**, and satisfactory results in two cases of

Exfoliative Membranous Enteritis. In other cases he found the remedy successful, especially in relieving the symptoms of intestinal decomposition. He met with no toxic symptoms, but in one case an iodine-acne occurred. He has not used this drug in the diarrhœas of tuberculosis or of typhoid fever. The drug was generally administered as a powder diluted with an equal quantity of milk sugar.

Dr. Wilcox believes that from his observations we may conclude : (1,) That the use of organic is preferable to inorganic bismuth compounds ; (2,) That the compounds of bismuth with beta-naphthol, phenol, tribromo-phenol, and tetra-iodo-phenol-phthalein are remedies which produce practical intestinal antiseptis ; (3,) That they are indicated in all gastro-intestinal fermentations and catarrhs until the symptoms are relieved, the dose to be determined by the severity of the symptoms ; (4,) That they are non-toxic, and do not give rise to untoward symptoms.

REFERENCES.—¹“Med. News,” July 31, 1897 ; “Med. Chron.,” Sept. 1897.

BOROL.

Jaeger finds that this antiseptic is three times as energetic as carbolic acid. It occurs in irregular, glasslike fragments soluble in five volumes of water.

A strong watery solution has a subacid and somewhat astringent taste. In solutions of from 2 to 10 per cent., it kills the micro-organisms of **Malignant Pustule** and **Cholera**, also the *Staphylococcus pyogenes aureus*. It is said to be non-poisonous and to be readily taken by patients, but the results of its internal administration in such diseases as acute septicæmia, erysipelas, and epidemic cerebro-spinal meningitis have not yet been striking. From 10 to 20 drops of a 20 per cent. solution may be given to a child, from 30 to 50 to an adult, every four hours, in some diluent not containing milk, which it coagulates. For surgical purposes, a 5 per cent. solution in sterilized water may be used, and as an application to mucous surfaces, a 1 or 2 per cent. solution.

REFERENCE.—“Gaz. hebd. de méd. et de Chir.,” April 11, 1897.

CALCIUM CHLORIDE.

Dr. Murrell¹ speaks highly of the utility of chloride of calcium in the production of artificial calcification—a process which is of a distinctly conservative nature. He considers the most efficient means for the production of this change is the administration of lime salts, and especially of chloride of calcium. This drug has a digitalis action, but it may be administered even in large doses with perfect safety.

The dose is usually said to be from 10 to 20 grains a day, but the author has frequently given 40 grains dissolved in a tumblerful of milk three times a day for weeks together with excellent results. The formula he employs is the following :—

R	Calcii Chloridi	gr. 400		Aquæ ad	℥x
	Glycerini	℥j			

M. Sig.—Two tablespoonfuls in a tumbler of milk three times a day.

It may be urged that such large doses are not likely to be absorbed, but good results have followed their administration.

REFERENCE.—¹ "Med. Brief," July, 1897.

CANNABINOL.

Wood, Spivey, and Easterfield ¹ have obtained from *cannabis indica* a toxic red oil or resin which, unlike most of the active principles previously extracted, is extremely stable. It yields mono-acetyl and mono-benzoyl derivatives. It is insoluble in water, but is soluble in alcohol, ether, benzine, and organic solvents generally. As the compound contains at least one hydroxyl group, the name cannabinol has been applied to it. The dose is from 1½ to 2 grains, but this produces well marked symptoms.

Dr. C. R. Marshall ² investigated its pharmacological action on himself. He took a single dose of from 1½ to 2 grains, and produced symptoms of acute intoxication accompanied by extreme risibility. The symptoms last from three to four hours.

It is probable that in doses of from ½ a grain to 1 grain this preparation will be found useful in the treatment of **Neuralgia** and **Sick Headache**. *Cannabis indica* has no lethal action.

REFERENCES.—¹ "Proc. Cambridge Philosoph. Soc.," vol. ix, p. 144; ² "Lancet," Jan. 23, 1897.

CHELIDONIUM.

Dr. N. N. Denisenko, of Brjanski, advocates the employment of this remedy in the treatment of **Cancerous Growths**. The celandine or "swallow wort" belongs to the Natural Order *Papaveraceæ* and grows wild in Great Britain. It has long been a popular remedy for warts, and is sometimes known as "wart wort." Denisenko orders for internal use from 45 to 120 grains of the stalks of the great celandine (*chelidonium majus*), in 3 ounces of peppermint water, the whole to be taken in two days. In addition, hypodermic injections are given every few days of 150 grains of the extract mixed with an equal quantity of distilled water. Formerly Dr. Denisenko inserted the needle into the substance of the tumour, but now he finds it better to make the injections into the subcutaneous cellular tissue in the

neighbourhood of the new growth. He declares that in about a week the condition of the patient begins to improve, the tumour and any cancerous glands there may be becoming softer and more tender. After a time they become encapsulated, and they can then easily be shelled out ; but if this is not done they suppurate.

Dr. Denisenko's method of preparing the injection is as follows : He mixes *extractum chelidonii* with an equal quantity of distilled water in a test tube, filters the mixture through cotton wool, and heats it over a spirit lamp till the fluid bubbles up a few times. According to him this procedure, while sterilizing the fluid, increases its efficacy. In his experience there is no inflammatory reaction, only pain which soon subsides. In the case of rectal cancer, the surface of the growth was painted over with the fluid through a speculum, and hypodermic injections were made in the neighbourhood of the anus.

Dr. Robinson, of Constantinople, records a case of ulcerated cancer of the upper jaw in which distinct improvement followed local applications of celandine, and the internal administration of the remedy in doses of from 1 to 5 grains.

Tiling used the extract in cases of cancer of the breast, tongue, and stomach ; Bidder, Beckmann, and Mörsch have tried it in cancer of the uterus, and Moritz in cancer of the liver, and in every case without benefit.

REFERENCES.—“*Vrach*,” 1896, No. 30 ; “*Deut. Med.-Zeit.*,” Sept., 24, 1896 ; “*New York Med. Journ.*,” Oct. 10, 1896 ; “*Lancet*,” Dec. 19, 1896 ; “*Brit. Med. Journ.*,” Feb. 6, 1897.

CHINOSOL.

Chinosol combines large antiseptic properties with a relatively smaller power of doing harm. Bonnema¹ finds that it is a protoplasmic poison ; 1 per cent. solution arrested the movements of *amœbæ* almost instantaneously, and $\frac{1}{2}$ per cent. solution in one hour and a-half. It also hinders in a marked degree the decomposition of meat. It checks both alcoholic and lactic acid fermentation. It hinders the conversion of albuminous bodies into peptones, and it has a deterrent action on the coagulation of albumen. The author has also investigated the action of chinosol on bacteria. To solutions of chinosol (1 in 200, 500, 1,000,) a pure cultivation of *staphylococcus* was added until the solution became slightly turbid. Agar plates were then inoculated with small quantities of these solutions. These experiments proved that chinosol in $\frac{1}{2}$ to 2 per cent. solution did not kill this coccus in twenty-five, forty-five, or fifty minutes. Nor did solutions of $2\frac{1}{2}$ to 3 per cent. in twelve minutes ; but of four experiments with chinosol in 4 per cent. solution, two only showed growth.

A 5 per cent. solution killed the micro-organism. Chinosol hinders the development of the staphylococcus in a solution of 1 in 40,000. A mixture of 2 c.cm. chinosol (1 in 2,000) with 38 c.cm. bouillon was inoculated with a pure culture of the staphylococcus and kept at 37° C. for several days; it remained sterile, whereas 40 c.cm. of bouillon inoculated in the same way became turbid in twenty-four hours. Sublimate in similar solution produced the same result. The author has made experiments on frogs and rabbits. In one experiment a rabbit weighing 2,500 g. was given 1 g. chinosol by the mouth, and in an hour and a quarter a further 2 g. without any bad effect.

REFERENCES.—¹“Therap. Monats.,” Dec. 1896, and “Brit. Med. Journ.,” Jan. 9, 1897.

CREASOTE.

Vladimir de Holstein,¹ of Paris, finds that creasote is one of the best remedies for habitual **Constipation**, if administered according to certain directions. He was first led to employ this drug for constipation from observing its effects on the intestinal functions of a chlorotic young woman for whom he had prescribed it after ferruginous and arsenical preparations had been given for some time without appreciable effect. The author thinks that chlorosis often depends on some auto-intoxication having its origin in the bowels, and creasote, being capable of destroying noxious micro-organisms in the digestive canal, may lead to an improved condition of blood. The patient in question suffered from obstinate constipation, which had been treated without results by abdominal massage and oil enemata. After the creasote treatment was commenced a daily evacuation was obtained. Since then he has employed similar treatment in a large number of cases of habitual constipation, and so far has not come upon a single one in which either the creasote was not well borne or in which it did not prove successful. Beech creasote is used, and it is administered in drops in a glass of wine and water, milk, or plain water twice a day after meals. To accustom the patient to the burning taste of the creasote it is best to commence with a single drop, and gradually to increase this to 7 or 8 or even more if that should prove insufficient. The treatment should be persevered in for several months, and is said to have no ill effects on the teeth or other organs. There is no reason to suppose that creasote possesses purgative properties, its effect on constipation appearing to be due to its neutralizing some intestinal toxin which in patients with chronic constipation paralyzes the action of the digestive canal.

REFERENCE.—¹“Lancet,” Oct. 9, 1897.

ENTEROL.

This is a new antiseptic for internal use, and possessing particular advantages in the treatment of septic conditions of the urinary tract, especially in **Pyelitis, Cystitis, Gonorrhœa** and **Surgical Kidney**. It is a watery, colourless, sometimes slightly brown liquid, with a specific gravity of 1.036, and with the taste and smell of kresol. It is slightly soluble in a hundred parts of water, and has about six times the antiseptic strength of carbolic acid. It is a combination of the various cresols which are formed under normal conditions by the metabolism of food stuffs in the lower part of the bowel, and which act as natural antiseptics and prevent further decomposition. These cresols,¹ whether artificially ingested or naturally formed, are absorbed chiefly by the lacteals, and finally eliminated in the urine as ethereal sulphates. During their passage along the urinary tract in the form of ethereal sulphates, they exercise a salutary antiseptic action on the mucous membrane or epithelial lining of the bladder, renal tubes and pelvis of the kidney, etc. In septic conditions of these parts its action is said to be more efficacious than salicylic or benzoic acids. For practical purposes a solution of 1 in 500 is found sufficiently strong, and of this 1 drachm is the usual dose. It is given in pill, capsule, and mixture with equal parts of olive oil; 30 capsules can be taken at once without harm. After entering the stomach, about 80 per cent. remains in the alimentary canal, and 20 per cent. is excreted by means of the urine. It can be taken regularly for a considerable time without producing disagreeable symptoms. The urine of persons under a course of treatment with this drug does not undergo the usual ammoniacal fermentation, and may stand for many days without showing signs of decomposition. Enterol has many other useful applications, either as a local or general antiseptic; but for septic condition of the urinary tract it is superior to other bodies of a similar nature.

Fass² states that he has given the drug in doses of $\frac{1}{2}$ to 1 drachm daily for weeks, the urine exhibiting the characteristic grey-green colour, without producing any systematic complications. The drug does not produce the slightest irritation in the kidneys or genito-urinary tract, and even in chronic nephritis the albumin contained in the urine is not increased. We are cautioned against the use of the drug in cases of acute nephritis, congestion of the kidney, or feebleness of the heart. When there is inflammation of the stomach the drug should be greatly diluted. In the case of gastric ulcer it should not be exhibited. The indications for the use of the drug are in cystitis, pyelitis, and before and after operative interference with

the urinary passages in cases of acute gonorrhœa. In the latter affection entrol is particularly efficacious, 8 capsules being given each day.

REFERENCES.—¹“Med. Mod.,” Oct. 31, 1896; ²“Centralbl. f. d. Krank. der Harn- u. Sexual-Organe.”

EOSOTE.

Eosote is the valerianic acid ester of creasote. It is a labile fluid distilling at 240° C., and is free from irritant or toxic properties. It is put up in gelatine capsules, and is taken without the repugnance usually exhibited towards creasote compounds. Each capsule contains 3 grains, and the dose commences with 1 three times a day, increasing to 6 or 9, so that nearly 30 grains of creasote can be taken daily in this form.

Grawitz¹ treated thirty-five cases of **Tuberculosis** and many cases of gastro-intestinal affection in which it was used as an intestinal disinfectant. Its employment was nearly always attended with success, and only in a few cases was it necessary, after many weeks, to suspend or cease the use of the drug on account of digestive disturbances. No toxic indications were observed, and the author strongly recommends it on account of its palatability, its cheapness, and the ease with which large doses are tolerated.

REFERENCES.—¹“Therap. Monats.,” July, 1896, and “Brit. Med. Journ.,” Oct. 10, 1896.

ERODIUM CICUTARIUM.

Komorovicz¹ has employed an infusion of this geraniaceous plant (made from 1 part of the plant and 12 parts of distilled water) in the treatment of **Puerperal Metrorrhagia** and **Hæmorrhage** due to uterine fibroids, and finds it even more powerful than ergot. He gives the infusion in doses of a dessertspoonful every two hours.

REFERENCE.—¹“Journ. des Prat.,” Oct. 31, 1896.

ERYTHROL TETRANITRATE.

Dr. Arthur Burton,¹ of Cambridge, records two cases of **High Arterial Tension** treated with erythrol tetranitrate. In one case the drug was administered for the relief of the asthmatic attacks of chronic nephritis, in the other case for the relief of cardiac pain. In the latter case the effect of the drug in reducing arterial tension was shown by sphygmograms.

Dr. Murrell² points out that the nitrates of erythrol and mannitol have a less marked but a more prolonged action on blood pressure than those of glycerol and glycol, whilst methyl nitrate has comparatively little action. Like nitroglycerine, glycol denitrate in doses of

$\frac{1}{100}$ of a grain quickly reduces tension, but it is so much more expensive than nitroglycerine that it is not likely to compete with it as a therapeutic agent.

REFERENCES.—¹ "Brit. Med. Journ.," April 8, 1897; ² "Med. Brief," May, 1897.

ESERINE.

Hartridge ¹ points out that the action of eserine on the ciliary muscle does not show itself so quickly as on the iris. It first increases the energy of the ciliary muscle and this adds to the amplitude of the accommodation, so that while the punctum remotum remains the same the punctum proximum is nearer than normal; as the action on the ciliary muscle increases, spasm occurs, and the punctum remotum is brought nearer the eye, producing in the emmetrope a temporary myopia with a diminution of the range of accommodation. But the will always retains some power over this function; it is never entirely abolished.

The action on the ciliary muscle commences in about fifteen minutes, reaching its maximum in about forty minutes from the instillation, and then gradually declines, the effects having entirely passed off in one and one-half hours.

Eserine appears to act by stimulating those branches of the third nerve which supply the sphincter pupillæ and the ciliary muscle. It probably also weakens the action of the sympathetic nerve.

The weakest solution which has been ascertained to have any effect upon the iris is 1 in 12,000; a stronger solution is necessary to act on the ciliary muscle: 1 in 1000, is the weakest that has an effect. Myotics are most frequently used in cases of **Glaucoma**, and are invaluable; by causing the pupil to contract we draw the iris away from the iritic angle, and so open up the important lymphatic outlet in this region, thus diminishing the tension. When eserine does not act quickly some other means must be taken to reduce the tension. For glaucoma the author employs the following formula:—

R̄	Eserinæ Sulphatis	gr. j	Aquæ Destillatæ	ʒj
	Acidi Salicylici	gr. j		
	Ft. guttæ.			Ter in die.

Or where the eserine is not well borne by the conjunctiva:—

R̄	Eserinæ Sulphatis	gr. j	Acidi Salicylici	gr. j
	Cocaine Hydrochlor.	gr. ij	Aquæ Destillatæ	ʒj
	Ft. guttæ.			Ter in die.

In **Perforating Wounds** near the margin of the cornea, eserine may be very useful by dragging away the iris from the wound and so preventing the formation of an anterior synechia.

Some cases of **Corneal Ulcers** heal well under eserine; in these cases a somewhat weaker solution may be employed :—

R̄	Eserinæ Sulphatis	gr. ss	Aquæ Destillatæ	3j
	Acidi Salicylici	gr. j		
		Ft. guttæ.	Ter in die.	

REFERENCE.—“ Med. Brief,” July, 1897.

EUCAINÉ.

Eucaïne is a synthetic cocaine.¹ Its action was first investigated by Dr. Gaetano Vinci, of Berlin, and extensive clinical investigations of its action were subsequently undertaken by Emile Berger² of Paris, Deneffe³ of Gand, Belgium, Hal Foster,⁴ and A. L. Fuller.⁵ These investigations show that the action of eucaïne is analogous to that of cocaine with the following important differences : (1,) Eucaïne is less toxic ; (2,) It slows the pulse ; (3,) It does not affect the pupils.

During the past year several important papers on the clinical uses of the drug have appeared.

W. Jobson Horne and Macleod Yearsley⁶ have shown that it is of value as a local anæsthetic in the **Surgery of the Throat, Nose, and Ear**. They found that a 2 per cent. solution was sufficient for anæsthetizing the uvula and adjacent parts for laryngoscopy or posterior rhinoscopy, as well as for aural examinations. Anæsthesia was somewhat slower in onset than in the case of cocaine. When established the anæsthesia was fully equal to that of cocaine, and its duration was usually about fifteen minutes.

G. W. Spencer⁷ used eucaïne hydrochlorate as a local anæsthetic in twenty cases of operation for various conditions, such as ingrowing toe-nail, abscess of the jaw, face, and elsewhere, infected wounds, epithelioma of nose, sebaceous tumour and ganglion ; and his conclusion from this experience is that this agent produces the most complete local anæsthesia of any drug used up to date. In experiments made to determine the value of various local anæsthetics in operating upon ingrowing toe-nail, the same operative method was practised in all the cases, no matter what anæsthetic agent was employed. An attempt was made in a certain number of these cases to produce anæsthesia before and during the operation by constriction and ethyl chloride, and to produce it after the operation by the application of pure carbolic acid. This method was abandoned, as the anæsthesia was incomplete, but by the employment of eucaïne in addition to the above means, the operation was rendered absolutely painless from the beginning to the end. The amount of eucaïne to be used will depend upon the severity

and duration of the operation. When the solution is to be injected as in the case of punctured wounds, tumours, etc., from 1 to 2 drachms of a 5 per cent. solution will be sufficient in most cases. When the drug is to be applied to a raw surface or to mucous membrane, as in ulcers, it is best to apply 1 drachm of a 5 per cent. solution to the wound, then saturate a thin piece of cotton with a like amount of the same solution, and allow this to remain in contact with the surface for five minutes. At the expiration of this time the area can be lightly curetted without pain. After the superficial tissues of an ulcer have been removed by light curettement, 2 more drachms of the solution should be applied in the same manner. Small ulcers can be treated by the same process by using smaller amounts of the drug.

Legueu,⁸ at the Association Française des Médecins et Chirurgiens Urologistes, reported that for six months he had used eucaine instead of cocaine for three reasons: (1,) The anæsthesia is at least equally perfect; (2,) Its toxicity is less, inasmuch as two guinea-pigs of the same weight are killed by 6 centigrammes of cocaine in three-quarters of an hour, and 8 centigrammes of eucaine in an hour and a-half respectively; (3,) The solution can be sterilized by heat, whereas cocaine is decomposed by this means. He uses solutions of a strength of 1 in 100 to 1 in 500; he injects under the skin 8 to 10 c.cm. of a 1 in 100 solution, and into the bladder 100 to 200 g. of the 1 in 500 solution. The only drawback which he has found in eucaine so far is that it causes congestion of the parts to which it is applied.

Dr. P. Silex,⁹ of the Berlin University Ophthalmological Clinic, found that eucaine was not equal to cocaine. It did, indeed, he says, cause anæsthesia of the cornea, but its instillation was followed by such violent burning and by so great an injection of the ocular conjunctiva that he ceased using it after about fifteen patients had been experimented with.

He subsequently obtained a new preparation known as Eucaine B, which he found much more satisfactory. It is closely related not only to the older eucaine A, but also to cocaine, and especially to tropacocaine; but it differs from the two last-named bodies in that it is much less toxic. The hydrochloride also differs from the similar cocaine salt in that it can be boiled for a long time without undergoing decomposition. Its solution can therefore be sterilized by boiling.

The hydrochloride of eucaine B dissolves in water at about 70° F. to the amount of about 5 per cent. Dr. Vinci says 3 per cent.,

but this is not the case. The solution is of a neutral or very faintly alkaline reaction. It differs from eucaine A in that its irritant effects are minimal, and are only seen in isolated cases. This circumstance, together with its very slight toxicity and its powerful anæsthetic action, renders eucaine B very valuable for a variety of purposes; among others, for the Schleich infiltration method and for subcutaneous injection in general.

Encouraged by its general good qualities, Dr. Silex experimented with the eucaine B in regard to its local action, using it in a 2 per cent. watery solution on normal eyes, on inflamed eyes, and in operations upon the eyes.

To give a general opinion as to the value of the remedy, he says that, so far as the specimens used in the University Ophthalmological Clinic are concerned, it fully satisfied all the demands made on it. Patients affected with iritis, who have already had cocaine, he thinks, will probably miss that drug. The unchanged pupil is an advantage in cataract operations, where the iris can be better avoided than when it is dilated, for it often becomes difficult to pass the thick mass and make the incision into the limbus.

He recommends the employment of eucaine B, and thinks it deserves a place in our armamentarium. It is always an advantage, he remarks, if we can replace the natural product of distant lands by a scientific chemical compound.

G. Hartridge¹⁰ says: "This drug in my hands has not proved very satisfactory, producing, when applied to the human eye, a good deal of conjunctival irritation and hyperæmia, while its anæsthetic qualities seemed distinctly inferior to those of cocaine; latterly I have been trying another variety of the same drug, called eucaine B, and am inclined to speak rather more favourably than of eucaine A (that first brought out), as producing less irritation and hyperæmia, with equal anæsthetic properties; but I very much doubt if it will ever take the place of cocaine in ophthalmic surgery.

"The strength of the solutions may be the same as those of cocaine, and prepared in the same way."

REFERENCES.—¹"Med. Ann.," 1897, p. 658; ²"Rev. de thérap. méd.-chir.," 1896, No. 12; ³"Le Scalpel," 1896, No. 11; ⁴"Langsdale's Lancet," Aug., 1896; ⁵"Internat. Journ. of Surg.," ix., p. 259; ⁶"Brit. Med. Journ.," Jan. 6, 1897; ⁷"Univ. Med. Mag. Philadelphia," Nov., 1896; ⁸"Méd. Mod.," Oct. 28, 1896; ⁹"Deut. med. Woch.," Feb. 4, 1897; ¹⁰"Med. Brief," July, 1897

EUCHININ.

Euchinin is formed by the action of ethyl-chlorocarbonate on quinine. It crystallizes in needles, and is readily soluble in alcohol, ether, or chloroform, but is with difficulty dissolved by water. The chloride of euchinin is easily soluble in water, the sulphate is less soluble, and the tannate least so. The base euchinin is tasteless unless it remains on the tongue for a long time, when it is slightly bitter. If given in sherry, milk, or cocoa, it produces no unpleasant taste. Healthy people take 2 grains, without unpleasant effects.

Von Noorden,¹ of Frankfort, tried euchinin in fifteen cases of **Whooping-Cough**, fourteen cases of **Hectic Fever in Phthisis**, five cases of **Sepsis** of various origin, in **Pneumonia**, **Typhoid Fever**, and also in several cases of **Neuralgia**. Beneficial and rapid effects were noted in twelve cases of whooping-cough. The temperature had a lower range in the fever cases after a few days. The results were especially good in cases of supraorbital neuralgia. Euchinin is best given in tablet form. In children it may be given in milk, soup, or cocoa. The tannate is much to be recommended. The author thinks that euchinin deserves a further trial, and that it will prove an addition to our resources.

REFERENCE.—¹"Centralbl. f. inn. Med.," Nov. 28, 1896.

EUROPHEN.

This compound is being largely used as an antiseptic.¹

Saalfeld² recommends it as the best substitute for iodoform in many dermatoses; it has no smell, and it does not irritate inflamed skin. In **Varicose Ulcers with Eczema** it is of great value, for it has a beneficial effect on the eczema. It may be applied in powder, either alone or mixed with powdered boric acid. As an application in the intertrigo of children he recommends:—

R: Europhen	5.0	Talc. Venet. ad	100.0
Lanolin Anhydr.	5.0		

He has found it of value in **Pustular Affections** and **Folliculitis**, in the form of a 10 per cent. ointment with lanolin, as well as in cases of **Pemphigus Vulgaris** and **Impetigo**.

REFERENCES.—¹"Med. Ann.," 1897, p. 37; ²"Lewin's Festschrift," March, 1896.

FILMOGEN.

This is a solution of nitrous cellulose in acetone mixed with an oleaginous substance. - It forms a yellowish-white semi-fluid body, insoluble in water and flexible when dry.

Schiff,¹ of Vienna, reports well of it, and says that it is vastly superior to collodion and other substances of the same class. Its uses are so obvious that they need not be enumerated.

REFERENCE.—¹“Med. Press and Circ.,” Nov. 25, 1896.

GELANTHUM.

Under this name Unna¹ has put forward another of the occlusive varnish-like dressings designed for the incorporation of various remedial agents for use in **Skin Diseases**. Unlike many previously tried substances, this holds chrysarobin, pyrogallol, resorcin, and salicylic acid, in suspension. The difficulty heretofore has been that they cake up or form into small masses. If first emulsified, 10 per cent. of fat and 20 per cent. of glycerin can be used with ichthyol, 30 per cent., or with carbolic acid. The varnish is composed of equal parts of gelatin and tragacanth mixed. It is said to spread easily, to dry quickly with a smooth surface, and to be inexpensive.

REFERENCE.—¹“Therap. Woch.,” Sept. 13, 1896.

GRINDELIA ROBUSTA.

Dott Luigi D'Amore¹ finds that in frogs this drug produces first paralysis of the higher nerve-centres and then of the inferior. The nerves and muscles retain their excitability only on direct stimulation, and at last lose their irritability. In dogs large doses depress and weaken the nerve-centres after having markedly excited them. In frogs, when the drug is applied to the heart, there are a slow and progressive diminution of the beat and a lengthening of the systole; sometimes the action is so energetic that there is a rapid diminution of the number of beats and arrest of the heart in systole and with an inexcitable myocardium. In warm-blooded animals the phenomena which it produces may be ascribed to an exciting action upon the bulbar centre of the pneumogastric. The effects upon blood-pressure are with small doses a slight rise, which is more marked with medium doses; but as the amount is increased the pressure gradually and continually falls, whilst the oscillations are shorter. In its action upon the respiratory system lies its chief interest. Its action on the pneumogastric and its power of contracting bronchial muscles explain its use in asthma. The drug contains an active principle, probably a terpene, which relieves the associated catarrh. The urine is increased by small and diminished by large doses, partly from changes in blood-pressure and partly from direct action on the renal epithelium. The saliva and bile are increased.

REFERENCE.—¹“Giorn. d. Assoc. Napoletana di Med. e Natural.,” 1896, Puntata 5a e 6a, p. 331.

HÆMOL HYDRARGYROIODIDE.

This preparation is said to contain 13 per cent. of mercury and 28 per cent. of iodine in combination with blood pigment.

Kobert¹ recommends it in cases of advanced **Syphilis**, in which the internal administration of mercury is indicated.

The particular advantages of the compound are said to be that it is perfectly unirritating to the mucous membranes, that it passes through the stomach without being dissolved, and that, together with the specific effect of iodine and mercury, it exerts a mild chalybeate action. The formula is as follows :—

R. Hæmol Hydrarg.	gr. 150	Glycerine Ointment	q.s.
Opium	gr. 15		

Mix and divide into 100 pills, of which there may be given at first 1, gradually increased to 4, three times a day.

Johannes Bartelt² reports thirty instances of the use of this drug. He concludes that: (1,) There is no doubt that it is capable of absorption, and in very debilitated individuals is useful in building up anew red blood-corpuscles; (2,) The favourable action of hæmol is due to the entire constitution of the remedy, which may be designated as a blood-corpuscle extract; (3,) No untoward symptoms arise from its use. It does not give rise to constipation, the appetite remains unchanged, and the teeth are not blackened.

REFERENCES.—¹“Centralbl. f. Nerven. u. Psych.,” May, 1896, and “Fortschr. d. Med.,” Nov. 1, 1896; ²“Therap. Monats.,” 1896, Heft 10, S. 533.

HOLOCAIN.

R. Kuthé¹ has made some experiments with a new local anæsthetic. The original name of the drug was “Diathoxyathenyldi-phenylamidin,” but the shorter substitute is likely to prove more popular. The chloride of holocain crystallizes in white needles, dissolves in hot water, but is only sparingly soluble in cold water. If the salt is heated with water in a glass vessel the solution is often cloudy, owing to a small amount of alkali present; hence a porcelain vessel should be used.

The instillation of a 1 per cent. solution of holocain into the eye, causes anæsthesia of the ocular surface in fifteen seconds, which lasts at least for ten minutes. The instillation can be kept up for lengthened periods without giving rise to the desiccation of the corneal epithelium which is so frequently observed under the prolonged use of cocaine.

Lowenstamm² relates some investigations into the use of 1 per cent. watery solutions in ophthalmic practice.

It cannot be employed subcutaneously because its toxic action is considerably greater than cocaine, and even in ophthalmic work it should be used in minimum doses. By applying a few drops anæsthesia is produced in the eye in about ten minutes.

The author has employed holocain in sixteen cases, of which seven were normal eyes, five were examples of foreign bodies, and four were operation cases. In one set of three cases, 4 drops were put into the eye and repeated in five minutes, when the anæsthesia of the cornea and conjunctiva lasted on an average nineteen minutes. In six other cases the same quantity was used on three occasions at intervals of five minutes, and the anæsthesia lasted on an average thirty minutes. A slight touch was felt before the lid reflex returned.

In three cases 4 drops were applied on three occasions at intervals of two minutes, and here the anæsthesia lasted on an average twenty-six minutes. This method has the advantage of requiring only a short time before the operation can be commenced. Often an increase in the anæsthesia of the conjunctiva was noted after the second and third application, and where this did not occur a passing sensation of burning was experienced. The removal of the foreign body was accomplished in one eye eight minutes and in the other fifteen minutes after the second application, without the patient feeling anything.

In two operations for squint lasting fifteen to twenty minutes, two applications sufficed. As regards gradual action no difference was noted from cocaine, but the tension of the bulb was not lessened, the cornea retained its lustre and moistness, and the pupil was not dilated. No toxic effect was noticed and no change in the pulse or urine.

Heinz³ allowed a 5 per cent. solution, and also the dry powder to be applied to his own eye, and no intoxication symptoms occurred.

Holocain is less readily absorbed from the conjunctiva than cocaine. It is a prompt, pronounced, and long-lasting anæsthetic with no unpleasant results. Boiling the solution is not requisite, as holocain possesses powerful disinfectant properties.

Guttman⁴ has used holocain in thirty cases, of which thirteen were examples of a foreign body in the eye, two of keratitis, seven of operations on the eye, and in eight cases the eyes were healthy. One minute after the introduction of 3 to 5 drops of a 1 per cent. solution there was anæsthesia of the cornea. A passing burning sensation was felt. The foreign bodies were removed without inconvenience, and the galvano-cautery was used in a case of corneal

ulcer and in a case of keratitis. Tattooing was also performed in two cases of leucoma. In one case it was possible to compare tenotomy of the eye muscles under cocaine and under holocain. Less pain was experienced in the latter instance. The duration of anæsthesia under holocain is from five to fifteen minutes. The cornea remains moist and shining. The ocular tension is not diminished. The pupil remains unaltered and accommodation is unaffected. In a patient aged forty-eight 3 drops of a 2 per cent. solution of cocaine were introduced into one eye; anæsthesia appeared in two and a half minutes, and lasted three and a quarter minutes, the pupil dilated, and the tension diminished. With 3 drops of a 1 per cent. solution of holocain introduced into the other eye anæsthesia appeared after a slight feeling of burning for one minute, and lasted nine minutes, the pupil was not dilated, and there was no alteration in tension.

The rapidity of anæsthesia with holocain is an advantage. The dilatation of the pupil under cocaine for the removal of foreign bodies is a disadvantage. The lessened pressure is a drawback in cataract extraction, but useful in operations for glaucoma. The author says that holocain should not be used subcutaneously, as intoxication symptoms were rapidly produced by a small dose in a rabbit. For external use he recommends it as a substitute for cocaine.

Heinz and Schlösser⁵ find that a 1 per cent. solution dropped into a rabbit's eye causes no irritation; full anæsthesia is obtained in fifteen to twenty seconds, and lasts twelve to fifteen minutes. In dogs, full anæsthesia is obtained in forty seconds, and lasts twenty minutes or more. The anæsthesia is due to paralysis of the sensory nerve endings, and not to ischæmia.

Holocain has no effect on the pupil, on accommodation, or on the blood-vessels. It is detrimental to the lower forms of life (protozoa), inhibiting their movements, and, in fact, showing itself to be a protoplasmic poison. It has the same effect on bacteria. When absorbed it has poisonous effects analogous to those of strychnine.

For ophthalmic practice the authors employ a 1 per cent. solution, 1 or 2 drops of which produces analgesia in forty or fifty seconds; if 1 or 2 drops more are now instilled in thirty seconds full corneal anæsthesia will have been obtained. When first instilled it causes some burning sensations, which, however pass off in thirty to forty seconds; also slight conjunctival injection, passing off in one to two minutes. Anæsthesia lasts at least ten minutes. In the rabbit a 1 per cent. solution coloured with methylene blue has been injected

into the anterior chamber without irritation or inflammatory or other effects; and the solution has also been employed in operations involving an opening into the eye; its anæsthetic effect on the iris would seem to be quite as complete as on the cornea, and no poisonous effects from absorption have been observed. Like cocaine, it causes some unevenness of the corneal epithelium in rabbits, but this has not occurred in man.

Holocain is less likely than cocaine to injure the epithelium as it does not constrict blood-vessels, so that the corneal lymph circulation ought not to be impaired. Its speedy action is also in its favour.

REFERENCES.—¹"Centralbl. f. Augenh.," Feb., 1897; ²"Therap. Monats.," May, 1897; ³"Brit. Med. Journ.," May 29, 1897; ⁴"Deut. med. Woch.," March 11, 1897; ⁵"Klin. Monats. f. Augenh.," April, 1897.

HOMATROPINE.

Homatropine has almost replaced atropine for ophthalmoscope work.

Mr. Gustavus Hartridge¹ points out that homatropine may be used alone—2 or 4 grains to the ounce of water, or in combination with cocaine, which produces maximum dilatation very rapidly. For this purpose the following formula may be recommended:—

℞ Homatropin Hydrobro.	gr. iv	Sodæ Salicylatis	gr. ij
Cocaine Hydrochlor.	gr. viii	Aquæ Dest. ad	℥j
		Ft. guttæ.	

These solutions are difficult to keep, and are therefore better for being frequently renewed. They can be sterilized by boiling occasionally; for this purpose the bottles introduced by Stroschein are very convenient.

The effects of homatropine on the eye are much the same as those of atropine, but the symptoms pass off much more rapidly, and this is the quality which renders it so acceptable to the ophthalmic surgeon. A drop of a 1 per cent. solution produces full dilatation of the pupil in about twenty minutes with paralysis of the accommodation; these symptoms pass off entirely in from eighteen to twenty hours.

In some cases conjunctival irritation has been produced, though less frequently than with atropine. Toxic symptoms have also been recorded in one case of a child.

The combination of homatropine and cocaine is strongly recommended, as producing maximum dilatation in a short time.

When homatropine is used by itself the following formula is convenient:—

℞ Homatropine Hydrobr.	gr. iv	Aquæ Destillatæ	℥j
Acidi Salicylici	gr. ij		

Before putting a mydriatic into the eye the tension of the globe should always be estimated as a matter of routine ; if above normal then a mydriatic must not be used.

REFERENCE.—¹“ Med. Brief,” June and July, 1897.

IODOL.

Iodol continues to attract some attention as an iodoform substitute. Its physical characters have already been described.¹

In the following formulæ² various means of applying the drug are given.

Iodol-ether.—A 10 to 20 per cent. ethereal solution for injections into **Fistulous Tracts** and for sprays. By spraying it upon the gauze with which a **Wound** has been bandaged, an excellent iodol gauze is had.

Iodol-ether-collodion :—

℞ Iodol	1 part	Collodion	10 parts
Ether	5 parts		

For applying to open or sewed **Wounds**.

Iodol-alcohol-glycerin :—

℞ Iodol	1 part	Glycerine	14 to 34 parts
Alcohol	16 parts		

Iodol-lanolin, containing 5 to 10 per cent., for inunction in **Glandular Tumours**.

Iodol-vaselin :—

℞ Iodol	1 to 2 parts	Vaseline	10 to 15 parts

For internal as well as external **Abscesses**.

Iodol paste.—Iodol, triturated with a few drops of alcohol, and sufficient glycerine to yield the desired consistency, for **Vaginal Tampons**.

Iodol gauze and cotton.

Iodol is also used in powder in ophthalmic practice, and internally as a substitute for potassium iodide, in doses of a gramme a day.

REFERENCES. — ¹“ Med. Ann.,” 1897, p. 46 ; ²“ Pharm. Centralb.,” 1896, xxxvii., p. 475.

LYCETOL.

R. de Tollenaere¹ finds that lycetol, or tartrate of dimethylpiperazin, unites to the solvent action of the piperazin the not less efficacious action of the tartaric component, which in the economy is transformed into a carbonate, alkalizing the blood whilst possessing a diuretic action. By its continued use, the painful exacerbations of the chronically gouty may be prevented ; sometimes even the biurate deposits may be caused to disappear from the articulations.

The author had recourse to the drug in two cases of **Chronic Gout**, which had been under treatment for many years, in both of which almost all the anti-gout remedies had been exhibited with but poor results. In each the lycetol was given during an exacerbation. In the first case, that of a man aged fifty-five, the result was very satisfactory; after ten days the pains had completely yielded, and the patient, who still takes $\frac{1}{2}$ a grain of lycetol daily, has been for six months free from all uneasiness. In the second case, a man aged thirty-five, the result was excellent for the first two or three days.

Lycetol was also given in seven cases of **Chronic Articular Rheumatism**. Of these, in four cases there was a satisfactory result, lasting, however, only a few days, so that after a fortnight the patients experienced no change in their condition; in the remaining three there ensued an obvious improvement of the local and general condition, the patients suffered less, felt less pain in the affected joints; in one case there was an evident betterment of the lesions.

In one case of arthritis deformans the drug was tried, but with no result.

In four cases of sciatica the result was favourable in two, negative in two. In one case of seven weeks' standing, of rheumatic origin, in a man of forty, the patient improved so rapidly that after three days he failed to present himself.

The author concludes that the drug, without being a specific for gout and the chronic forms of rheumatism, is yet a valuable remedy in the treatment of these affections. The lycetol was usually given in divided doses, amounting to $1\frac{1}{2}$ to 2 grains a day, a glass of water being taken with each powder.

REFERENCES.—¹“Belg. méd.,” Jan. 28, 1897; “Brit. Med. Journ.,” April, 10, 1897. See also “Med. Ann.,” 1897, p. 49.

MALT PREPARATIONS.

Harrington¹ has undertaken an investigation, both chemical and physiological, of the different liquid malt preparations now on the market. Twenty-one different brands of liquid malt extract were obtained and analyzed. That they were not true malt extracts is shown by the fact that in not one was there the slightest diastasic power; all were alcoholic, some being stronger than beer, ale, or even porter. Six contained less than 3 per cent., five contained between 3 and 4 per cent., four between 4 and 5 per cent., two between 5 and 6 per cent., three between 6 and 7 per cent., and one over 7 per cent. of alcohol. In food value they proved to be about equal to heavy beers and porters. In a number of specimens a large amount of salicylic acid

was detected, the largest amount being found in one which claims to have been "made in Germany." It is obvious that caution should be exercised in prescribing preparations of this class.

REFERENCE.—¹"Journ. Boston Soc. of Med. Sci.," Nov. 1896.

MEAT EXTRACTS.

Voit¹ discusses the value of meat extract as a nutritive and flavouring or appetising agent. Meat extract is nothing more than concentrated broth of the consistency of honey. It contains all the constituents of meat which are soluble in water. One kilogramme of pure meat yields 31 g. of extract, and 241 g. dried meat 25.2 g. Meat extract in the market contains 19 per cent. water, 58 organic matter, and 23 mineral salts. It thus contains very little nutritive material, and is chiefly an appetising agent. These flavouring agents form, however, an important factor in feeding, and meat extract is one of the best of them. Recently some have attributed a not inconsiderable nutritive value to the soluble albuminous products present in meat extract, but the most important question lies in how much nutritive material is contained in such extracts. In 10 g. meat extract, which represents a considerable dose, there is at most 2 g. of soluble albuminous products, and this amount is extremely small when compared with the 118 g. required by the healthy individual. Albumin, fat, meal flour, etc., have been added to meat extract in order to increase the nutritive value. No direct addition of nutritive agents to meat extract is desirable. The healthy individual should not take the meat extract for its own value, but should take it in addition to other food stuffs which contain a sufficiency of nutritive products. An individual who cannot tolerate ordinary diet should take meat peptones or other peptone preparations in which albumin is already dissolved. It is better to employ meat extract alone as an appetising agent, without directly adding to it other nutritive constituents.

REFERENCES.—¹"Münch. med. Woch.," March 2, 1897; "Brit. Med. Journ.," April 24, 1897.

MIGNONETTE.

In Russia the mignonette (*Reseda luteola*) has long been held in great popular esteem as a remedy for **Tapeworm**. The case is recorded of a woman who, fasting, took a large dose of a strong decoction of the flowers and then a full dose of castor oil. At the expiration of three hours she voided the tapeworm.

REFERENCES.—"Journ. de méd. de Paris," Oct. 4, 1896; "New York Med. Journ.," Oct. 17, 1896.

MONSONIA.

Dr. John Maberly,¹ as the result of six years' experience in the Transvaal and Matabeleland, speaks enthusiastically of the value of this plant in the treatment of **Dysentery**. The monsoniæ belong to the natural order *Geraniaceæ*, and the species employed by the author were the *Monsonia Ovata* and the *Monsonia Burkei*. The plants are annuals and should be gathered in January or February. The preparation employed is a tincture of the strength of 2½ ozs. to the pint of rectified spirit. The dose is 1 drachm every three hours. The author records one hundred cases of dysentery treated by this method, and of these ninety were acute. The average number of days the patient was under treatment was only 2·3, a result far in advance of that obtained by any other method of treatment. The paper is a remarkable one and is deserving of every consideration.

REFERENCE.—¹ "Lancet," Feb. 6 and 13, 1897.

MYDROL.

This name has been given to an iodomethylate of phenylpyrazol, which is a white, odourless, bitter powder readily soluble in water.

Albertoni, of Bologna, finds that mydrol dilates the pupil in animals that have a round pupil, but has no such effect on those in which the pupil is oblong.

Cattaneo finds that by reason of the short duration of its mydriatic action, when employed in a solution of from 5 to 10 per cent., and its transitory effect on the accommodation and especially on the tonicity of the eye, its diagnostic use is of advantage in cases in which there is reason to apprehend harm from the increase of intra-ocular pressure caused by other mydriatics.

Albertoni adds that it is absolutely unirritating and non-poisonous, and that it excels cocaine in diminishing the amount of blood not only in the vessels of the conjunctiva, but also in those of the iris and most probably in those of the deeper structures. By virtue of these properties, while it has no actual anæsthetic action, it is serviceable in **Ciliary and Supraciliary Pain, Blepharospasm, Lacrymation**, and many **Diseases of the Iris**, the **Cornea**, the **Sclera**, and the **Conjunctiva**, especially that of the **Globe**. Mydrol is said to be absorbed rapidly, and to be eliminated unchanged in the urine.

REFERENCE.—"Therap. Woch.," Dec. 6, 1896.

NITROGLYCERINE.

Nitroglycerine dilates the blood-vessels in much the same way as nitrite of amyl. It does not flush the face, but it often produces headache. The influence of nitrite of amyl is transitory, but the

effect of nitroglycerine is much more persistent, and the blood-vessels remain dilated for fully half an hour.

In **Angina Pectoris** Dr. Murrell¹ finds that by the administration of repeated doses the sufferer from this malady may be kept under its influence for a considerable period of time. It is this particular property which renders it of such inestimable value in the treatment of spasmodic diseases. It is sometimes said that it is slow in its action, but it all depends on the mode of administration. Many practitioners pin their faith to the tabellæ made with chocolate, and containing $\frac{1}{100}$ of a grain in each. This is a mistake, and far better results will be obtained by using the official solution—the liquor nitroglycerini. The great point is to get it rapidly absorbed, and this is easily accomplished by administering it in a mixture containing aromatic and stimulating substances, such as tincture of capsicum and peppermint water.

The author's favourite formula is :—

R. Liquor Nitroglycerini	℥ss	Tinct. Capsici	℥j
Spiritus Chloroformi	℥ss	Aq. Ment. Pip ad	℥j

A teaspoonful every four hours with an extra dose immediately on the onset of the attack.

This is the stock bottle, and from it should be replenished night and morning, or oftener, if necessary, three or four little corked bottles containing a drachm in each, which may be carried in the waistcoat pocket so as to be immediately available for use. By carrying them in the waistcoat pocket the solution approximates to the temperature of the body, and warm solutions are absorbed very much more rapidly than medicines which are cold. People vary in their susceptibility to the action of the drug and some are disagreeably affected by even a $\frac{1}{800}$ of a grain, but it is usually perfectly safe to begin with a $\frac{1}{100}$ of a grain, that is $\frac{1}{2}$ a drachm of the 1 per cent. solution in the four ounce mixture. Tolerance, especially in severe cases, is rapidly established, and then the dose may be rapidly increased. Beginning with $\frac{1}{2}$ a drachm to the bottle the dose is increased in a few days to a drachm, and then to $1\frac{1}{2}$ drachms, 2 drachms, and so on. Should the patient complain of severe throbbing pain in the head the dose must be eased off, but as long as he can take it it must be pushed and given with a free hand. This is really the secret of treating angina pectoris and all affections characterized by spasmodic contraction of the blood-vessels. Some practitioners say they never get any good from nitroglycerine; in other words, they have never learnt to use it. Many patients take 1 grain of the pure drug every four hours. Nitroglycerine is as efficacious in angina pectoris as bromide of potassium is in epilepsy.

Dr. C. R. Marshall² has undertaken a research with the view of determining the action of digitalis and vaso-dilators in combination. The digitalis preparation employed was the "digitalinum purum" of the German Pharmacopœia. It is not pure, but it produces a well-marked digitalis action, and has the great advantage of being soluble in water, so that it can be used for hypodermic injections without admixture with alcohol. When nitro-glycerine and digitalin were given together, the fall of blood-pressure was greater than with nitro-glycerine alone. Digitalis exerts an influence in counteracting the effect of the members of the nitrite group on blood-vessels; but the influence of the latter in antagonizing digitalis is much more powerful.

REFERENCE.—¹"Med. Brief," May, 1897; ²"Journ. of Physiol.," Sept. 1897.

ORPHOL, OR BETANAPHTHOL-BISMUTH.

This is a light-brown powder with an agreeable odour, and pleasant, aromatic taste. It contains 20 per cent. of betanaphthol and 80 per cent. of bismuth oxide in chemical combination.

Goliner,¹ of Erfurt, reports his experience with this remedy in **Tuberculous Inflammations of the Intestinal Tract with Diarrhœa**. What is required in the diarrhœa of consumptives is a reliable intestinal antiseptic that is also an astringent. Something is needed to lessen the bad effects of the micro-organisms and their products, by making the mucous membrane a bad culture medium for them, lessening the secretion, and reducing to a minimum their nutrient supply. The author claims that all this is accomplished by orphol. He explains the action of the drug by saying that it is decomposed in the bowel into naphthol and bismuth. The naphthol is antiseptic and the bismuth is astringent. A small amount of the naphthol appears in the urine.

The dose of orphol is 75 grains a day, and it may be given mixed with honey or suspended in syrup and water.

REFERENCES.—¹"Allg. med. Central-Zeit.," 1896, No. 96; "Amer. Med. and Surg. Bull.," Feb. 25, 1897; see also Chaumier "De l'Emploi de l'Orphol dans l'antisepsie intestinale" Tours, 1896.

PELLOTINE. (See also "Anhalonium Lewinii.")

Dr. Richard H. Hutchins¹ publishes the results of some observations made with pellotine, an alkaloid obtained from anhalonium. The sleep produced by this drug is particularly calm and natural, and the patient can be aroused readily. No unpleasant after-effects, such as headache, nausea, or coated tongue, are observed, and the patient usually awakes refreshed and calm. When it is given during the

morning hours two or three hours' sleep can be obtained ; when it is given at bedtime the patients, as a rule, sleep much longer, frequently through the night. An objectionable feature is its tendency to cause vertigo when it is given in doses sufficient to produce its full effects ; but this was observed only when the patients were out of bed, and a recumbent posture obviates it to a great extent.

Dr. A. Hefter,² as the result of laboratory experiments with this drug, found that it had the formula $C_{13}H_{13}NO_3$. He says that the dose as a hypnotic is about a grain, and thinks that it is allied in physiological action to morphine. About two hours after taking it by the mouth there come on a feeling of weariness, weight of the limbs and eyelids, and a disinclination to bodily and mental exertion. The pulse-rate is diminished for about an hour. Headache and nausea have been observed. The poisonous symptoms are those of a narcotic.

Jolly³ used pellotine as a hypnotic in doses of $\frac{2}{3}$ of a grain to $1\frac{1}{2}$ grains. As the result of forty observations he thinks that the drug should receive a further trial.

Dr. Alexander Pilez⁴ employed pellotine in fifty-eight cases, in doses of $\frac{1}{3}$ of a grain, and reports that 50 per cent. gave satisfactory results ; in 29 per cent. the success was moderate, and in 21 per cent. failure ensued.

REFERENCES.—¹ "State Hosp. Bull.," vol. ii., No. 1 ; ² "Therap. Monats.," Heft 6, S. 327, 1896 ; ³ "Deut. med. Woch.," No. 2, 1896 ; ⁴ "Wien. klin. Woch.," No. 48, S. 1121, 1896.

PEPPERMINT.

Dr. Carasso¹ has employed oil of peppermint as an antiseptic in the treatment of **Phthisis** with success. He makes his patients breathe almost constantly the vapour of essence of peppermint, and he gives his patient internally the oil combined with creasote, which he thinks does not act as a parasiticide, but diminishes the secretion of the bronchial mucous membrane, increases the appetite, prevents fermentation, and thus favours the absorption of food. The following is the form for internal administration which he recommends :—

R Creasote	8 grammes	Chloroform	20 grammes
Rectified Spirit	550 "	Ess. of Peppermint	8 "
Glycerine	250 "		

He orders of this a tablespoonful every three hours. At the same time he advises a plentiful diet and the administration of wines and tonics.

Under this treatment he has found the bacilli rapidly decrease in number and disappear entirely in ten to sixty days. He strongly advises that the inhalations of the oil of peppermint should be con-

tinued after the bacilli have disappeared. He records thirty cases in illustration of his treatment.

[It will be obvious that the addition of creasote to the mixture materially detracts from the value of the observation.—ED.]

REFERENCES.—¹ "Lyon méd.," Sept. 13, 1896; "Med. Chron.," Jan., 1897.

PERIPLOCA GRÆCA.

Bourginsky¹ finds that this asclepiadeous plant, indigenous to Greece, western Asia, and southern Europe, and naturalized in the western part of the State of New York, known by the common names of climbing dog's-bane, milk-vine, silk-vine, Syrian silk-plant, and Virginian silk, contains a glucoside, periplocin, which he is inclined to look upon as an isomer or polymer of Schmiedeberg's digitalin.

From experiments on frogs he concludes that the plant contains a cardiac poison which acts like the other cardiacs on the function of the heart. In large doses it stimulates also the respiratory and vomiting centres. Its antagonist is atropine.

As a **Cardiac Stimulant** the fluid extract may be given in doses of from 5 to 10 drops, and periplocin itself in doses of $\frac{1}{32}$ of a grain.

REFERENCES.—¹ "Vrach," 1896, No. 28; "Journ. de méd. de Paris," March 21, 1897.

PERONIN.

This substance is produced when the hydrogen atom of the hydroxyl group of morphine ($C_{17}H_{18}NO_2(OH)$) is displaced by the alcohol radical ($C_6H_5CH_2$).

Schröder finds that it is useful in the **Cough of Tubercular Patients**. In twelve instances comparison was made between the effects produced by this drug and codeine phosphate. In eight of these the cough-irritation was immediately relieved; in two this was obtained only after larger doses, and in two there was no result. There was no disturbance of digestion, but two patients complained of morning nausea and a tendency to constipation. In all cases there was better and more restful sleep. The remedy can be administered in solution in water or as a pill.

REFERENCE.—"Therap. Monats.," 1897, Heft 1. S. 4.

PHOSPHATE OF LIME.

Dr. Murrell¹ finds that this drug is useful in **Hectic and Chronic Wasting Diseases of Tubercular Origin**, in **Chronic Tubercular Diarrhœa**, in **Scrofula** and in **Caries of the Bones**. It is well known that persons broken in health from prolonged town life and overwork, or who from various causes are languid, hipped, and incapable of much

exertion either mental or physical, derive benefit from this drug. It is one of the normal constituents of bone, and is apt to be deficient in women who have become debilitated from excessive child-bearing and prolonged suckling. In cases of **Tuberculosis** the author gives it in conjunction with carbonate of lime and phosphate of iron. The following is the formula :—

℞ Calcii Phosphat.	gr. 1	Ferri Phosphat	gr. 1
Calcii Carbonat.	gr. 1		
	M.		

This may be given as a powder or preferably in the form of a pill, of which 2 may be taken three times a day after meals. It may be said that iron is contra-indicated in tuberculosis, and that is true of large doses, but these small quantities often do a great deal of good.

REFERENCE.—¹“Med. Brief,” July, 1897.

PHYTOLACCA DECANDRA.

Dr. F. R. Millard, of San Diego, California, says that the alterative action of this drug is primarily and principally on the sebaceous glands and on glands that are modifications of that type. There is no other purely vegetable alterative that so surely selects these glands for the sphere of its greatest alterative activity as poke root does. Hence it should, as a rule, be given alone, although in some cases it may be combined advantageously with burdock root.

In **Puerperal Mastitis**, before the inflammation has devitalized the tissues, the administration of poke root every three hours will abort it. Before the advent of sodium salicylate, poke root was the author's main reliance in the treatment of **Quinsy**; now he uses the salicylate until the acute stage is passed, and afterwards the poke root internally and locally for some time. He states that when carefully used it never fails to permanently cure patients who have been subject to frequently recurring attacks.

In regard to the treatment of **Cancer**, he finds that if the administration of 1 part of saturated tincture of poke root and 2 parts of saturated tincture of burdock root is begun quite early it sometimes delays the progress of epithelioma and scirrhus. It has no effect upon either after ulceration becomes extensive, and none on sarcoma.

REFERENCES.—“Med. and Surg. Report,” Oct. 3, 1896; “New York Med. Journ.,” Oct. 24, 1896.

PICROTOXINE.

Professor Albert Robin, of Paris, speaks highly of the value of this drug in the treatment of **Hæmatemesis**. For many years picrotoxin has been largely employed in the treatment of the night-

sweating of phthisis, usually in doses of $\frac{1}{60}$ of a grain at bedtime, but hitherto it has not been suggested as a remedy for bleeding from the stomach.

Robin¹ says that the best symptomatic treatment of hæmatemesis is as follows: As soon as you are called to a patient who vomits blood you must order him to bed, enjoin absolute immobility, give an hypodermic injection of ergotin over the epigastrium, and then apply ice. Internally, from 1 to 2 grains of opium should be given, and every two hours a spoonful of the following mixture:—

℞ Ergotin	5j	Syrup of Turpentine	3j
Gallic Acid	grs. x	Water	3iv
Extr. of Opium	grs. ij		

For the syncope that may occur you should employ the usual remedies; horizontal decubitus, head low, injections of ether, flagellation, mustard leaves to the legs. Where symptoms of peritonitis set in indicating perforation of the stomach, you should use hypodermic injections of morphine. In the event of the vomiting becoming incoercible, you should order from 8 to 10 drops of the following preparation in a small quantity of water, to be repeated at intervals:—

℞ Picrotoxine	gr. j	Ergotin	grs. xx
Hydroch. of Morphia	gr. j	Water	5ij
Sulphate of Atropine	gr. $\frac{1}{80}$	Alcohol	q.s. (to dissolve)

Besides the immediate accidents, hæmatemesis may be followed by other effects which should not be forgotten. The blood which has not been rejected may decompose and provoke putrid fermentation, especially in cases of constipation. The odour of the matters last vomited and of the breath of the patient will warn you of this condition. In such cases purgatives are indicated in order to evacuate the intestinal tract as quickly as possible. Besides enemata of antiseptic solutions you may give a powder composed of:—

℞ Calomel	grs. ij	Hydrated Magnesia	grs. xx
Jalap	grs. vj		

When the patient has got over his attack he will generally remain anæmic and debilitated. Preparations of iron become imperative, and preference is given to the perchloride, as it is hæmostatic as well as ferruginous. At the end of ten or twelve days it should be suspended, or it will act as an irritant to the gastric mucous membrane.

REFERENCE.—¹“Med. Press and Circ.,” Oct. 6, 1897.

PYOKTANIN.

Until comparatively recent times blue pyoktanin was known only as a local and general remedy in the treatment of inoperable malignant growths.¹

Among the many diseases in which pure methylene blue has been more or less largely employed as an internal remedy may be mentioned **Acute and Chronic Bright's Disease, Gastric Hyperacidity, Malaria, Headache, Diphtheria, Cystitis, and Gonorrhœa.**

In the first Netchaieff, among others, reports favourable results, even to the disappearance of albumin and hyaline casts from the urine, along with general improvement in various directions.

Berthier states that it may be given with advantage in **Indigestion** attended with pain, vomiting, and hyperacidity; the dose recommended is from 1 to 3 grains daily for several days, followed by a few days of rest, when it is to be resumed.

Conflicting reports have been made upon the value of the drug in malarial affections by Guttman, Ehrlich, Muehl, Lava, May, and others. In many instances it has seemed to act very beneficially, while in others it has failed. Lewy claims that marked relief follows its administration in various forms of **Headache, especially Angiospastic Migraine, Nervous Cephalalgias,** and especially the head pains of **Neurasthenia.** The relief is not alone temporary, but in many instances lasting. Ten doses of $1\frac{1}{2}$ grains each usually suffice for a cure.

In **Diphtheria** the use of the remedy either as a local application or internally has seemed to be overshadowed by antitoxin and other methods of treatment.

Recently several observers have advocated the remedy in acute gonorrhœa, and Moore² has seen it cut short the acute stage and decrease the suffering.

Allen has reported great improvement in some instances of chronic cystitis, and this in spite of the fact that several observers have noted strangury when the drug has been pushed.

Mya and Lewy advise powdered nutmeg to be given at the same time to prevent bladder irritation. The dose of pyoktanin is 1 decigramme or $1\frac{1}{2}$ grains in capsule once, twice, or thrice daily. The urine becomes blue or greenish within five hours of the initial dose, and remains so for several days after the last dose has been given. It must be remembered that toxic symptoms may be produced, and in all instances it is well to give in tentative dose until the patient's susceptibilities are tried. Methyl violet and impure pyoktanin are most apt to cause vomiting or other disagreeable symptoms.

REFERENCES.—¹"Med. Rec.," April 24, 1897; ²"Brit. Med. Journ.," Jan. 16, 1897.

PYRAMIDONE.

Professor Filehne describes this substance as a substitution compound of antipyrin in which an atom of hydrogen is replaced by the

group $\text{N} \begin{smallmatrix} \text{CH}_3 \\ \text{CH}_3 \end{smallmatrix}$. It is a white, crystalline, tasteless powder soluble in ten parts of water.

The effects of pyramidone on the nervous system are analogous to those of antipyrin throughout, and the mechanism of its antipyretic action is the same, that of increasing the dissipation of heat. Observation, however, discloses certain differences of effect. Pyramidone acts on man in doses only a third as large as those of antipyrin; its action is manifested more gradually and subsides more slowly. Its antipyretic action is much milder and lasts longer. Animals poisoned with large doses of pyramidone show no material alteration of the blood, either microscopically or spectroscopically, and no hæmorrhages, thromboses, or organic degenerations. In the healthy human subject, doses of 8 grains produce neither subjective nor objective effects; doses of from 5 to 8 grains were given to patients three times a day with advantage. The author finds it promptly efficacious in **Relieving Pain** of various sorts, such as febrile headache, pain in the lymph-glands and the spleen in pseudoleucæmia, that of tuberculous peritonitis, anæmia, and multiple neuritis, and intercostal neuralgia occurring as a sequel of influenza. In headaches, it is sufficient to give 6 grains.

In four cases of nephritis it had no effect on the symptoms, except on the headache in one case of contracted kidney. Its antipyretic action was proved in twelve cases, including those of **Tuberculosis, Typhus, Scarlet Fever, Pseudoleucæmia, Influenzal Pneumonia**, etc.

REFERENCES.—“Berlin. klin. Woch.,” Nov. 20, 1896; “Therap. Woch.,” Dec. 6, 1896; “New York Med. Journ.” Jan. 9, 1897.

RHUS TOXICODENDRON.

It is well known that the different kinds of rhus produce in many persons an eczematous condition.¹

Franz Pfaff² finds that the active principle of rhus toxicodendron and of rhus venenata is an irritant oil which he calls toxicodendrol.

Toxicodendrol is soluble in alcohol, ether, benzol, and chloroform, but insoluble in water. It is readily decomposed by heat. Applied to the skin it proved an active irritant, even when only a very minute quantity was used. The degree of activity varied in different persons. In some 1 milligramme produced hundreds of vesicles and considerable œdema on the arm. Even $\frac{1}{1000}$ of a milligramme dissolved in 2 drops of olive oil proved active in one case. The latent period varied from twenty-four hours in some cases to seven to nine days in others. Usually the first symptoms appeared four or five days after the application of the oil. The effect on the system when toxicodendrol

was given to rabbits was most marked on the kidneys, nephritis and conspicuous fatty degeneration being produced.

It is not unlikely that toxicodendrol will prove of value therapeutically, especially as a counter-irritant.

The rational treatment of rhus poisoning is to get rid of any toxicodendrol that may still be on the skin as soon as possible, no matter in what stage the eruption may be. This can be done by brushing the part vigorously with plenty of soap and water. Pfaff suggests washing the parts with an alcoholic solution of lead acetate. When alcohol is used the washing must be done thoroughly, otherwise the alcohol would only help the dermatitis to spread. Oily preparations should be avoided, as they extend the poison by giving it a larger area on which to work.

REFERENCES.—“*Med. Ann.*,” 1897, p. 62; “*Journ. Exper. Med.*,” March, 1897; “*Med. Chron.*,” August, 1897.

SALICYLIC ACID AND THE SALICYLATES.

M. G. Ponchet¹ states that salicylic acid diminishes the activity of protoplasm, slows the organic processes of formation or retrogression, acts upon formed and soluble ferments, arrests the amœboid movements of leucocytes, and suspends diapedesis. On the other hand, 30 to 45 grains produce cerebral congestion, accompanied by symptoms analogous to those observed from quinine-intoxication, notably tinnitus, disturbances of vision, and headache. Occasionally these attain to deafness and vertigo due to congestion of the middle and internal ear, which rarely may go on to true inflammation. Large doses produce hallucinations, delirium, profuse sweating, vomiting, and collapse. The kidneys may be the seat of hæmaturia, of hæmorrhage, and albuminuria. In a healthy man neither pulse nor temperature is changed. In animals, after poisonous doses, there is a marked depression of the vascular tension, paralysis immobilizes the organs of respiration, and death follows convulsions, caused by carbon-dioxide poisoning. In man, if ingested by the stomach, the sharp taste and vigorous irritation of mucous membrane, which may go on to nausea and vomiting and give place to burning sensations, are noted. Sometimes colicky pains, accompanied by diarrhœa, follow its administration to dogs. These symptoms should not be produced in man if the injunction, never to prescribe the sodium salicylate in powder or in concentrated solution, is followed. The only inconvenience, if the drug is properly administered, lies in a temporary intolerance, after prolonged administration, showing itself as a disgust for food as complete as after the use of an alkaline water or after alcoholic drinks. Salicylic acid is diffused through the organism with

great rapidity ; in healthy individuals it stimulates the urinary flow by irritating the renal epithelium, as does potassium nitrate, but this effect is diminished as inflammation develops. In inflammatory conditions of the kidneys and in severe general affections this secretion may be retarded or diminished ; for instance, in typhoid patients it may produce a true urinary break-down. The urinary solids are increased, phosphoric acid, the sulphates, carbonates, and preformed sulphates, the latter and, as a consequence, the phenol show that some of the acid has undergone decomposition. There is also a remarkable elimination of uric acid, even more notable than that produced by lithium ; in fact, lithium salicylate is an excellent evacuant of the urates. The saliva is sometimes, the perspiration and bile are always, increased. Sodium salicylate is an energetic cholagogue in small doses, 15 to 30 grains ; it increases and liquefies the bile, attaining its maximum action in two or three hours after its administration ; but gentle purgatives should be associated with it to stimulate intestinal peristalsis. However, it may give rise to hepatic congestion more or less intense, sometimes obliging the discontinuance of the drug.

The physiological action of salicylic acid can be summed up in the statement that it diminishes the vital activity of protoplasm. It is a specific in **Acute Articular Rheumatism** and in **Gout**, showing itself by a special action exercised not upon a cause still unknown in its real essence, but on account of the power of the anatomical element to sustain this cause and react under its influence. This, however, does not exclude a true specific action upon a cause still unknown, analogous to that exercised by quinine upon the blood-parasites of paludism or mercury upon syphilis. Besides this specific action, which may be called a special antiseptic, there is a general antiseptic one, which may be useful in **Variola**, **Diarrhœa**, **Diphtheria**, and **Orchitis** after **Blennorrhagia**. It is antithermic, but this is not a therapeutic property, for it is the first symptom of the toxic action. To characterize in few words the remarkable specific action of this drug : It is a remedy of a symptom, and not of a diathesis ; its use relieves only temporary accidents, preventing neither their production nor return, nor indeed their complications, as does quinine the accidents of paludism, or mercury those of syphilis.

Linossier and Lannois² showed in 1894 that guaiacol was absorbed by the healthy skin without the aid of friction, and advocated its external use as an antipyretic in **Tuberculosis**. They have recently experimented with the salicylates. Salicylic acid being but slightly volatile at the temperature of the body, they employed salicylate of methyl,

which constitutes $\frac{9}{10}$ of commercial oil of winter-green. After the application of 4 grammes to the skin of the thigh, the presence of salicylic acid was demonstrated in the urine in half an hour, elimination reaching its maximum in six to nine hours. At the end of twenty-four hours 25 to 35 per cent. had been excreted. A large proportion was never found after administration of 4 grammes of salicylate of sodium by the mouth. Intestinal elimination is also considerable, the fæces containing it in large quantity. The daily elimination by the kidneys during a course of treatment is almost constant.

REFERENCES.—“*Les Nouv. Rèm.*,” 1896, No. 3, p. 57, and No. 4, p. 89; “*Amer. Journ. Med. Sci.*,” Aug. 1896; “*Bull. de l’Acad. de méd.*,” 1896, and “*Quart. Med. Journ.*,” July, 1896.

SALINE INJECTIONS.

Lochelougue¹ traces the history of this treatment from its introduction by Joehrnichen, of Moscow, in 1830 to its discussion in the Academy of Medicine and Society of Biology last year. In infectious diseases the injections are invariably followed by a well-marked rigor like that of pneumonia, the temperature rises, perhaps to 105·4° F., with a quick pulse, and panting respiration. These symptoms gradually improve, perspiration sets in freely, and in from three to four hours a feeling of comfort supervenes, the headache disappears, the temperature rapidly falls to normal, the emunctories become active and a veritable polyuria, or occasionally a profuse diarrhœa is established. If this improvement be not permanent another injection generally makes it so. The experiments do not warrant any conclusion as to the action of these injections in intoxications. Nevertheless, in **Cholera, Pneumonia, Typhus and Typhoid Fever**, and in **Scarlatina**, as well as in **Diabetes, Uræmia, Paroxysmal Tachycardia**, they have in all cases been followed by improvement of the general condition, lowering of the temperature, abundant diuresis, and increase of the blood pressure. In general the subcutaneous method is to be preferred; venesection may precede the injection, as is indicated in uræmia.

Mourette² points out that intravenous injection aggravated and subcutaneous injection of saline fluid ameliorated the condition of a patient of Delbet’s whose heart was apparently at fault, and that a typhoid patient of Widal’s, twice benefited by a subcutaneous injection, succumbed during an intravenous one; he also mentions a fatal case of Chauffard’s from the same cause. He concludes that intravenous injection should not be employed if it is possible to wait for an hour or two; subcutaneous injection, though slower, is equally sure, and from it no accident has been reported.

Fourmeaux³ discusses the subcutaneous method very fully, both from the experimental and the clinical point of view, and gives a detailed and illustrated description of the technique. He agrees that the subcutaneous method is as efficient and less dangerous than the intravenous, and advocates the injection (about 600 grs.) as often as may be indicated during careful observation day and night. In diffuse hæmorrhage the dose should be from 200 to 300 grs. only. The injections are useful in **Shock** and **Infection** as well as in **Hæmorrhage**; fever is no contra-indication; hypothermy is not to be feared. Moreover, they may be used before or after operation on anæmic subjects by the surgeon, and should be in readiness during any intervention that is likely to be protracted. As a general tonic before, and more especially after, operative treatment, a daily injection of a more concentrated solution—2 per cent. of neutral phosphate of soda (Crocq)—may be employed. In grave **Asthénia** Chéron injects every two or three days 5 to 10 grs. of a solution containing 1 part of crystallized carbolic acid and 2 of chloride, 8 of sulphate, and 4 of phosphate of soda to 100.

Barbier⁴ reported to the Société Médicale des Hôpitaux that in intestinal infections of children at the breast a 7·5 per mille solution injected under the skin of the abdomen in quantities not exceeding in all 30 c.cm. in the twenty-four hours, apparently, by increasing the blood pressure and raising the temperature, stimulated the entire system, and patients in a state of collapse, with pinched nose, half-closed eyes, and cold extremities, rallied after one or more injections. The treatment seems to him to be indicated in **Infectious Enteritis** with hypothermy, and in chronic cases with loss of strength and low temperature, but has no effect on the diarrhœa, general nutrition or any phenomena other than those of collapse. Hayem says that, while the injection of saline solution is one of the most powerful means of restorative treatment, and is indicated in all choleric conditions, it has no beneficial influence on gastro-intestinal dyspepsias.

REFERENCES.—¹"Thèse de Paris," No. 6, 1896-7; ²Ibid., No. 40; ³Ibid., No. 82; ⁴"Sem. méd.," p. 488, 1896; "Brit. Med. Journ.," Jan. 30, 1897.

SALOL.

Dr. C. R. Marshall¹ points out that the use of this drug is not unattended with danger. A young woman had been taking for nearly six months, once or twice a day, a cachet containing 10 grains of salol for intestinal flatulence. She then had attacks of severe colic accompanied by vomiting. In one of these attacks she brought up a

crystalline mass or calculus, and it was stated that similar concretions had frequently been passed by the bowel. On examination it was found that the calculus was an almond-shaped body of a yellowish colour and weighing about a gramme. It had a salol-like odour and gave the chemical tests of this compound. The melting point was almost correct, so that the substance was practically pure. It is probable that the concretion was formed in the stomach.

Brossard² records the case of a woman who, after taking doses of $7\frac{1}{2}$ grains of salol several times a day for ten days, presented symptoms of intestinal obstruction. After thirty-six hours an action of the bowels was obtained and a number of calculi were passed, weighing in the aggregate 62 grains. They consisted of pure salol.

Girode,³ in making a *post mortem* examination of a patient who two days prior to death had been taking salol, found two masses of this substance weighing together 3 grammes.

Apart from the importance of the formation of salol calculi and the serious symptoms to which they may give rise, it is obvious that if the drug is not absorbed it cannot be therapeutically active. It should be rubbed up with some innocuous powder, or administered in the form of an emulsion.

REFERENCES.—¹"Brit. Med. Journ.," July 10, 1897; ²"Bull. gén. de thérap.," April 30, 1897; ³"Les Nouv. Remèdes," p. 270, 1893.

SALUBROL.

This is a substitute for iodoform introduced by M. Silber,¹ of Breslau. It is made by the action of bromine on a compound of methylcne and antipyrin. It is stable under ordinary circumstances, but on coming in contact with organic matter it gradually gives off bromine. The powder, applied to the skin, sometimes gives rise to a burning pain, but a 20 per cent. gauze has no irritating action. Salubrol has been given to animals subcutaneously in daily amounts of 150 grains without their manifesting any poisonous action.

REFERENCES.—¹"Deut. med. Woch.," Dec. 24, 1896; "Therap. Woch.," Jan. 3, 1897.

SANOFORM.

Sanoform is obtained by the action of iodine on gaultheria oil, and is the methyl ether of di-iodosalicylic acid. It is a white, odourless, and tasteless powder, and can be heated up to 200° C. without decomposing. It is soluble in 200 parts of cold or 10 parts of hot alcohol, and readily in ether, chloroform, benzol, and carbon disulphide, but very insoluble in water or glycerine. It forms with caustic

alkalies salts which are sparingly soluble in water. It contains 62·7 per cent. of iodine.

Schlesinger¹ states that the results of its use in surgery and gynæcology are extraordinarily good ; healing ensues more quickly and more certainly than with iodoform.

Arnheim has published seventy-two cases, including twenty-two of **Soft Sore**, twenty of **Hard Sore**, six of **Bubo**, sixteen of **Phimosis**, and three of **Surgical Wounds**, and finds that sanoform powder renders a secreting ulcer practically dry in two days, the secretion being soaked up by the powder, and forming with it an antiseptic covering beneath which suppuration speedily ceases. The iodine in sanoform is not set free by cell activity ; on the contrary, it seems to be extremely closely combined. The drug is slowly absorbed ; it first appears in the urine about twenty-four hours after injection, and does not entirely disappear for about fourteen days, the maximum excretion being from the third to the sixth day.

Sanoform can be used as powder, as a 10 per cent. ointment, or in a 1 per cent. solution in collodion.

Schlesinger particularly recommends sanoform gauze (10 per cent.), which, owing to the high temperature at which the drug decomposes, can be easily sterilized—a great advantage over iodoform gauze. A further point in its favour is that it contains no colouring matter, and stains neither the tissues nor the bandages.

REFERENCES.—¹ "Therap. Monats.," Sept., 1896 ; "Brit. Med. Journ.," Oct. 21, 1896.

SARSAPARILLA.

W. V. Schutz¹ has recently undertaken an elaborate investigation of the active principles of this drug.

Opinions as to the value of the drug as a therapeutic agent differ widely. Even when it was most largely used there were many who, on the ground of experience, denied its potency, and now that it is relegated for the most part to popular or domestic medicine, there are still some who hold, also on the ground of experience, that it has a curative influence in certain forms of disease.

As early as 1824 Pallota, of Naples, separated from sarsaparilla a substance, parillin, which was subsequently obtained in a pure state by Flückiger, who gave as its formula $C_{40}H_{70}O_{18}$ or $C_{48}H_{86}O_{18}$. This substance has also been called by some smilacin.

Otten, in 1876, separated another substance, which Merck has since prepared commercially—viz., sarsaparillasaponin. To this substance the names of smilacin and sarsasmilacin have also been given.

A third substance, sarsasaponin, has been obtained by the author.

These three compounds belong to a group of saponin substances having the general formula $C_nH_{2n-8}O_{10}$, and differ in physical properties and pharmacological powers.

Parillin is a crystalline substance insoluble in cold water. It is soluble in absolute alcohol, but in alcohol diluted with water it becomes less soluble as the amount of water is increased.

Sarsasaponin is also a crystalline substance, but is soluble in water. It dissolves only to a slight extent in absolute alcohol. In diluted alcohol it becomes more soluble as the amount of water is increased.

Smilacin is soluble in water. As prepared by Merck for commerce it is amorphous, but it is capable of crystallization.

All three substances are glucosides, and yield when boiled with dilute acid, glucose, and a new compound, which, in the case of parillin, is called parigenin. The other two substances yield sarsasapogenin.

The pharmacological effects of parillin, smilacin, and sarsasaponin resemble generally those produced by the active principles of quillaia bark (quillaiac acid and sapotoxin), but they are less toxic. Of the three, parillin is the least powerful, sarsasaponin the most so.

When taken by the mouth they cause salivation, nausea, irritation of the throat, vomiting, and diarrhoea.

Like other saponin substances, they powerfully influence muscle tissue when directly applied to it, causing contraction, rigidity, and loss of contractility. The motor nerve endings are killed earlier than the muscle.

When circulated through the isolated heart of a frog they cause contraction of the muscle tissue, and limit the heart movements. They decrease the volume of fluid expelled by each cardiac contraction, an effect which is the reverse of that produced by digitalis. Eventually the heart's movements cease, but if fluid which contains no poison be subsequently circulated through the heart, it recovers.

If added to blood outside the body, they have a powerful influence, causing solution of the red corpuscles. They are in this respect more active than many more toxic saponin-like substances, and it is worthy of remark that though parillin is distinctly the weakest in its general toxic effects, and in its power of influencing the tissues, whilst sarsasaponin is the strongest, yet in its action on the blood, parillin is almost as powerful as sarsasaponin, and distinctly more powerful than smilacin.

Dr. D. J. Leech² points out that this investigation throws no light on the supposed value of sarsaparilla in the treatment of syphilis.

REFERENCES.—¹“*Arb. d. Pharmakol. Inst. zu Dorpat*,” vol. xiv., 1896; ²“*Med. Chron.*,” May, 1897.

SCOPOLAMINE.

Hartridge¹ states that this drug is more powerful than atropine and is chiefly useful in those cases of **Iritis**, etc., where atropine irritation arises. He maintains that further experience is required with regard to its action in eye diseases.

Murrell¹ confirms the statement that a drop of 1 in 3,000 aqueous solution of the hydrobromate of scopolamine fully dilates the pupil in fifteen minutes and the effect persists for forty-eight hours. A drop of 1 in 20,000 solution will dilate the pupil, although not fully, in twenty minutes.

REFERENCE.—¹ "Med. Brief," July, 1897.

SENECIO.

Dr. Murrell¹ advocates the use of *senecio jacobœa*, or common ragwort, in the treatment of **Functional Amenorrhœa**. The preparation employed is a 1 in 10 tincture made with proof spirit from the whole plant. It is allowed to percolate for a week or ten days, so as to obtain as active a product as possible. It is of a dark brown colour, has an agreeable odour and a slightly bitter and aromatic taste. It remains clear at all events for some time when added to water or aerated water, and is by no means disagreeable to taste.

The prescription commonly employed is the following :—

R. Tinct. Senecio	℥ij	Sp. Chloroformi	℥ij
Syr. Limonis	℥j	Aquæ ad	℥x

M. Sig : One ounce four times a day after meals.

This is continued for a week, and should the period not be thoroughly re-established an interval of three weeks is allowed to elapse, and then the *senecio* mixture is taken for ten days.

A 3-grain *senecio* pill every three hours is also useful.

Dalché and Heim² treated fifteen patients with *senecio*, and give particulars of two cases of amenorrhœa in which it acted promptly and well. They also made some experiments with the aqueous and alcoholic extracts of *senecio vulgaris*, brought to a solid consistency and mixed. Large quantities of the American liquid extract were given to pregnant guinea-pigs without causing abortion or otherwise affecting the course of pregnancy.

Bardet and Bolognesi³ have made twenty observations in cases of amenorrhœa and dysmenorrhœa, using the solid extract of Dalché and Heim in doses of from 25 centigrammes to 2·5 grammes a day. They think that *senecio* has the constant property of provoking menstruation, and that it relieves painful menstruation if the reproductive organs are healthy, but not otherwise. In the discussion on the value of *senecio* in amenorrhœa at the Société de Thérapentique, M. Bardet

gave a detailed account of the cases on which these conclusions are based.

Grandval and Lajoux⁴ have isolated from senecio two alkaloids—senecine and senecionine. They are bitter substances, forming salts which are soluble in water.

Weit⁵, working with the chloro-hydrate of senecionine, finds that in frogs and in guinea-pigs it destroys the excitability of the motor nerves, leaving intact the irritability of the muscle itself. It slows the heart's action, and in large doses arrests the organ in systole.

Dr. W. E. Fothergill⁶ has made an extensive series of observations on the use of senecio in disorders of menstruation. He finds that senecio will not cause abortion or in any way influence the course of pregnancy. The practical utility of a drug which will cure functional amenorrhœa, but will not interfere with pregnancy, is great, especially from the point of view of diagnosis. The author gives details of ten cases of functional amenorrhœa in which senecio acted promptly in restoring the menstrual flow.

REFERENCES.—¹"Med. Brief," July 1897; "Brit. Med. Journ.," 1894, vol. i, p. 679; "Med. Press and Circ.," April 25, 1894; ²"Bull. gén. de thérap.," July 8, 1896; ³Ibid., July 23, 1896; ⁴"Journ. de pharm. et de chém.," 1895, Série 6 T. ii; ⁵"Union méd. du Nord," 1895, p. 119; ⁶"Med. Chron.," Nov. 1896, and Sept. 1897.

SILVER.

Crédé,¹ of Dresden, has made numerous experiments demonstrating the value of the silver salts as antiseptic agents in surgery and bacteriology.

Lactate of silver (known in the arts as actol) was found to possess bactericidal powers surpassing all other antiseptics, including corrosive sublimate. Having the disadvantage of irritating the tissues, eight other silver salts were tried, with the result that the citrate of silver (itrol) was found to possess every quality required of a good antiseptic. Its solubility is 1 in 3,800; it is colourless, non-irritating, without odour, and is as efficient as the lactate. Its usefulness has been demonstrated in the treatment of one thousand four hundred patients.

Some of the reasons for endeavouring to discover a new antiseptic are: The purely aseptic method is not everywhere and in all cases practicable. The ideal antiseptic, non-irritating, soluble, odourless, harmless to the tissues, applicable in powder form, and possessing an antagonistic action on every form of germ-life that we have to deal with, has not heretofore existed. All these qualities are united in itrol. Its small dosage makes its price small; used as a dressing it

can remain unchanged with less irritation than any other substance. It can be used to prepare dressings, silk and catgut. It will be found of service, used subcutaneously, in acute infectious diseases, especially erysipelas.

REFERENCES.—¹“Verhandl. der deutschen Gesellsch. f. Chir.,” XXV Congress, 1896; “Annals of Surg.,” April, 1897.

SPARTEINE SULPHATE.

Gilbert G. Cottam¹ states that he has employed sparteine sulphate in a number of surgical cases with beneficial results.

The effect of sparteine on the heart was first noticed by Laborde, whose observations were subsequently confirmed by Griffe, Garaud, and Masius. Germain Sée first drew attention to its value in cardiac affections; and Cheves Bevill, R. Langlois, and Maurange noted the remarkable properties of the sulphate as a **Cardiac Stimulant in Chloroform Narcosis**.

Bevill² uses it in doses of $\frac{1}{8}$ of a grain by the mouth, given thirty minutes before the chloroform is administered. He describes two cases in which the patients did well throughout prolonged anaesthesia.

Langlois and Maurange³ give from 0·5 to 0·6 of a grain of sparteine sulphate and $\frac{3}{10}$ of morphine hypodermically, fifteen minutes before the commencement of anaesthesia. They have employed it in a hundred and twenty cases. In many of these cases the patients suffered from heart disease or had to undergo prolonged operations, such as laparotomy, kelotomy, and reduction of dislocations. In all of them the heart-beats continued full and perfectly regular.

Cottam's mode of procedure is to inject hypodermically $\frac{1}{10}$ of a grain of sparteine sulphate ten minutes before the anaesthesia is commenced. If the operation is protracted, $\frac{1}{15}$ of a grain is injected during its progress. These doses have been found ample to secure the desired effect, although they are much smaller than is generally considered necessary.

Cottam gives an account of seven cases to illustrate the points enumerated. Sparteine sulphate was used in every instance in the manner just described, and the patients themselves, from various causes, were such as would be peculiarly susceptible to the depressing influence of chloroform, and hence admirably adapted to demonstrate the properties of sparteine.

A study of these cases leads him to the following conclusions:—

(1.) That in sparteine sulphate, administered hypodermically before the beginning of anaesthesia, in the dose of $\frac{1}{10}$ of a grain, repeated according to the nature of the operation and the condition of the

patient, we have a safe, efficient, and prompt heart stimulant in chloroform narcosis.

(2,) That it is not necessary either to combine it with morphine or to use it in larger doses than those specified.

(3,) That, other things being equal, there is less shock and there is a more prompt reaction with its use.

REFERENCES.—¹"Therap. Gaz.," Nov., 1896, and "New York Med. Journ.," Nov. 28, 1896; ²"Therap. Gaz.," vol. xix, p. 71; ³"Sem. méd.," Aug., 1894.

SULPHONAL.

Schulz¹ records a case of chronic sulphonal poisoning with fatal ending. The patient, a woman aged fifty-nine, had been under treatment for headaches, constipation, and restlessness, and was hysterical. On account of sleeplessness she had been taking sulphonal in doses of 15 grains, and had taken altogether about $\frac{1}{2}$ oz. within a month. When admitted to hospital for obstinate constipation with vomiting, there was a smell of acetone in the breath, the tongue was dry and furred, and there was great thirst, with restlessness and insomnia. All the organs otherwise were normal; the urine was normal. The next evening 25 grains of sulphonal were given, and the following day the urine was scanty, brownish-red in colour, but free from albumin. Four days later the gait was unsteady, and five days after this there was weakness of the limbs and anæsthesia of the legs down to the ankles; knee-jerks, previously normal, were now difficult to obtain. Weakness increased, the knee-jerks disappeared, incontinence of urine and fæces occurred, and two days later the patient died suddenly. Since the single dose of sulphonal mentioned the urine had continued brownish-red with no albumin, but a few altered red-blood corpuscles. The colour was found to be due to hæmatoporphyrin.

Schulz considers that the toxic results after the one dose of sulphonal were due to the obstinate constipation present causing the sulphonal to be retained in the body longer than usual. Great caution should therefore be exercised in ordering sulphonal for patients who are constipated, and where it is ordered a careful watch should be kept on the urine for hæmatoporphyrin.

REFERENCES.—¹"Neurol. Centralbl.," Oct., 1896; "Brit. Med. Journ.," Nov. 28, 1896.

TAKA-DIASTASE.

Taka-diastase¹ has of late been largely employed in cases of starch dyspepsia. Its action in various gastric disorders has been sought by Julius Friedenwald.² He maintains that the amyolytic action of

taka-diastase has been thoroughly established. Under favourable conditions it converts one hundred times its weight of starch in ten minutes. Its therapeutic uses, however, are still ill-defined. The author, by a series of experiments, has endeavoured to test the action of taka-diastase upon digestion within the stomach. The following conclusions are arrived at :—

(1,) Taka-diastase exerts no influence under normal conditions upon gastric digestion nor upon cases of nervous dyspepsia with normal motor and secretory functions.

(2,) In cases of motor disturbances of the stomach with normal secretory functions such as atony, taka-diastase increases the motor action without in any way influencing the secretory function or the digestion of starches.

(3,) In cases of subacidity taka-diastase acts differently, according to whether there is a catarrh or a nervous dyspepsia. In nervous cases it has no effect whatever upon digestion, while in cases of catarrh it appears to have a tendency to increase the flow of acid and promote the digestion of starches.

(4,) Taka-diastase exerts its most favourable influence in cases of superacidity. It not only promotes the digestion of starches in these cases, but diminishes the excess of acid and increases the motor function.

(5,) Taka-diastase in a great measure replaces the saliva when this secretion is diminished or absent. It then not only digests the starches in the stomach, but serves the other function of the saliva in stimulating the gastric secretion and therefore promoting the proteid digestion.

REFERENCES.—¹"Med. Ann.," 1897, p. 663 ; ²"New York Med. Journ.," May 29, 1897 ; "Med. Chron.," August, 1897.

THYROID MEDICATION.

Dr. Gabriel Gauthier¹ advocates thyroid medication in the treatment of cases of delayed union of fractures.

In thyroid medication the essential point, according to the author, is to use the fresh thyroid instead of pharmaceutical specialities. He appends some advice on the collection and preparation of the substance.

It is advisable for the doctor himself to get the thyroid lobes. If it is left to the butcher other substances may be supplied. The glands of young sheep are to be preferred, tuberculosis being extremely rare in this animal. The sheep has two thyroid bodies, one on each side of the trachea. The upper part of each thyroid corresponds exactly to the track of the butcher's knife in bleeding the animal ; the top of the gland is almost always cut by the knife, and this forms a good guiding mark for finding the gland at once.

The thyroids should be freed from connective tissue, etc., and may be given in the natural condition. An ordinary cachet will hold 3 grammes.

Gauthier points out that clinical experience proves the pronounced influence of the thyroid gland on the bony system, instancing the arrest of skeletal development in cretins and myxœdematous dwarfs, and the degree of osteomalacia sometimes associated with Graves's disease. Experiments on animals confirm the clinical statements. According to Trachewski, rickets in the fœtus may be produced by ablation of the thyroid glands of certain animals during gestation. Von Eiselberg extirpated the thyroids of two lambs, a third of the same litter being kept intact as a control. In the two lambs with extirpated thyroids, a marked arrest of growth was noted; the head was modified in form, as if flattened from before backwards.

Gauthier thinks the most interesting side of the question of the influence of the thyroid on the bony system is that of the beneficial effect of thyroid medication on nutritive troubles of bone. Bourneville found marked increase of growth in myxœdematous idiocy on administration of thyroid, and Hertoghe, of Anvers, declares that the arrest of growth due to the thyroid inadequacy may be corrected even at a relatively advanced age (twenty to twenty-seven years) by thyroid medication.

Schmidt, of Frankfort-on-Maine, and Maurice Springer and D. Serbanesco confirm this testimony to the good effect of thyroid feeding in disorders affecting bone.

To prepare the glycerine extract²: The lobes are weighed, chopped finely with an aseptic chopper, bruised well in a porcelain mortar, then mixed with a quantity of glycerine equal to four times the weight of the lobes. After three or four days, during which the mixture is triturated several times, the liquid is filtered. A transparent, slightly rose-tinted, viscous liquid is produced, not disagreeable in taste, and able to be kept a very long time in a cool place. A teaspoonful of it corresponds to 1 gramme of thyroid substance.

Thyroid medication has been resorted to with much success in the treatment of **Sporadic Cretinism**. Dr. A. Gordon Paterson³ points out that it is now an accepted fact that sporadic cretinism is a disease, probably congenital, occurring in infants and children, analogous to, if not identical with, the disease of adult life termed myxœdema. In both the essential feature is either the absence or the deficient action of the thyroid gland. Curling, in 1850, drew attention to the fact that in cretins the gland was either absent or diseased. Hilton Fagge later stated what he considered would be the condition of an adult in

whom the thyroid gland ceased to perform its functions—that is, he drew a correct clinical picture of myxœdema. Allowing for the fact that in infants and children the whole system, and especially the brain and bones, is undergoing rapid development, and that in adults these processes have come to an end, we find that we have to deal with a disease which is identical in both. In each disease the cerebral, motor, and trophic nervous systems are affected. In the infantile form the disease is due to some intra-uterine condition of either absence or mal-development of the thyroid gland. There are two theories propounded in regard to the reason why an absent or deficient thyroid gland should give rise to these abnormal conditions. The first is that the gland secretes some substance which is essential to the healthy and harmonious working of the central and peripheral nervous systems. By the want of this substance the nervous mechanism is deprived of a something which regulates the formation and deposition of mucin products, the mucin being consequently deposited in the superficial and finer meshes of the corium, impairing motility and impeding nervous impulses, afferent as well as efferent. The second theory is that the thyroid gland excretes from the blood some materials formed in the body metabolism which by their retention cause a form of toxæmia, affecting principally the cerebral centres and the nervous mechanism concerned in mucin metabolism. Whichever theory may prove correct, the result is the same—viz., the production of some substance which counteracts the abnormal constituents of the blood. This is clearly shown by the rapidity with which the œdema disappears under treatment, and shows that the substance has a solvent action on mucin when deposited, and therefore in health acts on the mucin constituents, which, if left to pass freely through the body, become deposited as mucin. The thyroid gland being ductless points to a secretion rather than an excretion. Implanting thyroid gland in the body causes an improvement, and as in such cases there cannot be an excretion, there must be a secretion of some substance neutralizing the toxic materials in the blood and system. When the disease occurs in early childhood it is probably due to the gradual failure of an imperfectly formed thyroid gland. When the disease occurs in adults the cause is usually some abnormal condition of the gland, which, through acting imperfectly, finally ceases to perform its functions. That the secretion of the thyroid gland exercises a powerful effect on the animal economy is shown by noting the results when the extract of the gland is administered in myxœdenia and in cases of obesity.

In the case of a male child affected with cretinism the author administered thyroid extract from the nineteenth month to the sixth

year, the dose being 7 drops of the glycerine extract. A marked improvement was noticed after the third dose.

Dr. H. E. Drake-Brockman,⁴ of Bengal, records the case of a Dhobi boy suffering from advanced cretinism, who was successfully treated with thyroid extract ; 3 grains of the dried extract were administered by mouth daily. At a later stage, as there was a marked absence of patellar reflex 5 grains of didymin were given daily in addition to the thyroid.

Dr. C. Morton Anderson⁵ treated a girl, aged eleven, suffering from cretinism, with thyroid, the dose administered being at first $2\frac{1}{2}$ grains every alternate day, and subsequently 5 grains every morning, and half that quantity in the evening. The result was most satisfactory.

Dr. T. Telford-Smith⁶ calls attention to the fact that one of the most marked among the many other signs of development produced in cretins during the administration of thyroid preparations is the rapid increase of growth in stature which takes place. As a point in the practical treatment of these cases it is found that during thyroid treatment this rapid growth of the skeleton leads to a softened condition of the bones, resulting in a yielding and bending of those which have to bear weight ; and as cretins under treatment become much more active and inclined to run about, this tendency to bending has to be guarded against. While in rickets, however produced, there is perverted and delayed ossification resulting in softening and bending of the bones, under thyroid treatment in cretinism there is rapid resumption of growth in the skeleton, leading to softening, which is most marked in the long bones and at the epiphyses. Cretins under thyroid treatment should, therefore, be watched for any commencing bending of the bones of the legs, and if such appears the child should for a time be hindered from walking or the legs supported by light splints. As an additional means of assisting the rapid bone and other growth the diet should be generous and the child should get plenty of sunlight and open air.

REFERENCES.—¹ "Lyon méd.," June 27 and July 11, 1897 ; ² "Med. Chron.," Aug., 1897 ; ³ "Lancet," Oct. 2, 1897 ; ⁴ *Ibid.*, Oct. 2, 1897 ; ⁵ *Ibid.*, Oct. 2, 1897 ; ⁶ *Ibid.*, Oct. 2, 1897.

TRIONAL.

Dr. J. Arthur Browne¹ speaks in the highest terms of the value of this drug as a hypnotic. He says : "I have given it to produce sleep in cases of **Pneumonia, Bronchitis, Alcoholism with Delirium, Insomnia** from mental worry, and other forms of nervous insomnia, and I have invariably found it satisfactory. It is rapid in its action, and it has these advantages over sulphonal or the bromides, that it is more

certain and does not produce the disagreeable sequelæ of sleepiness, lassitude, and depression on the day following its exhibition. Nor have I observed any derangement of the digestive system in connection with its administration. An initial dose, 20 or 24 grains, may usually be reduced to 15 grains or less, and in this way trional becomes invaluable for breaking a pernicious habit of sleeplessness, where a few good refreshing nights may restore the normal habit of sleep. Even in cases of confirmed insomnia, which have been treated unsuccessfully by chloral, paraldehyde, and the whole gamut of hypnotics, each drug having in turn to be increased in dose until it finally loses all power or becomes dangerous, trional in my hands has afforded marked relief without apparently any ill-effect, and has given tranquil refreshing sleep without any increase of the initial dose."

Ruhemann² has employed trional without inconvenience in all doses, to the extent that as much as nearly 3,500 grains have been given during a period of six months. He has also used it in the treatment of children with good effect. The doses to be given to children are as follows : for infants of one month to one year, 3 to 5 grains ; one to two years, 6 to 12 grains ; two to six years, 12 to 20 grains ; six to ten years, 20 to 25 grains. He uses it with advantage in the treatment of **Chorea** and conditions associated with **Cerebral Excitement** in childhood. In adults the dose as a maximum one is 30 grains. Should the patient be suffering from dyspepsia he advises the administration of trional by the rectum in milk in the dose of 20 grains. As a rule its influence under these circumstances is prompt, sleep coming on in from fifteen to thirty minutes and lasting from six to nine hours. Trional has no cumulative influence, and cardiac affections do not contra-indicate its administration.

REFERENCES.—¹ "Brit. Med. Journ.," March 22, 1897 ; ² "Journ. des Prat.," July 25, 1896.

TURPENTINE.

Dr. J. B. Walker¹ calls attention to the usefulness of turpentine as a hæmostatic, and also as a stimulant alterative in **Sub-acute** and **Chronic Catarrh of the Gastro-intestinal System**. This drug has been recommended by many authorities as an excellent hæmostatic, but its value has scarcely been recognized by the profession generally. The author first tried it in a case of severe **Hæmatemesis** from gastric ulcer, when all other remedies only aggravated the condition. The first dose of turpentine was the first thing retained for many days, and a cure was rapidly effected. In hæmatemesis from chronic alcoholism or chronic venous engorgement from other causes it is more efficient than the astringents.

The author thinks that gastro-intestinal troubles have greatly increased of late years, and attributes this to influenza. In these catarrhs of the stomach and intestines, after the acute symptoms subside, there is often left an irritability which lingers, causing annoyance and sometimes danger. The tongue is often pale and but slightly furred, with a yellowish or yellowish white coat. The stomach may reject everything put into it, even water ; or it may be less irritable, with dyspeptic symptoms which are very persistent. In the bowels the pain is usually referred to the suprapubic and inguinal regions, accompanied by a sense of heaviness and a general feeling of languor and depression. The author has found no remedy serve so well as oil of turpentine in these conditions. He believes the best method of administration is in suspension ; 2 to 10 drops of turpentine may be stirred into an ounce or two of water, well sweetened with the saccharum anisi of the German Pharmacopœia. The acrimony of the turpentine is thus corrected, and palate and stomach accept it readily. Where the stomach is non-retentive small doses every two hours may be given. In cases where the irritation is not so great 5-minim capsules may be given an hour after meals.

In catarrhs of the respiratory system after the subsidence of acute symptoms, where a free secretion is present, or where the catarrh persists with or without localized sub-crepitant *râles* its value is exceptional.

REFERENCES.—"Therap. Gaz.," July 15, 1897 ; "Med. Chron.," Sept. 1897.

XEROFORM.

Dr. Josef Grünfeld¹ finds that xeroform, or bismuth tribromophenol² (1,) Not only possesses a powerful antibacterial action, but by combining with toxins and ptomaines renders them harmless, setting free bismuth, which makes insoluble compounds with these poisons ; (2,) It has marked drying and astringent properties ; (3,) It is also a deodorant, and therefore particularly useful for **Wound-Cavities** about the digestive or urinary tract ; (4,) It is not irritant either to wounds or to surrounding soft parts ; (5,) It relieves pain partly through its contained bismuth and partly through the protective covering which it forms ; (6,) It is non-poisonous, from 75 to 90 grains having been taken internally without harm ; (7,) It stimulates granulation-tissue and skin-formation, therefore shortening the period of cure ; (8,) It is hæmostatic. As a result of absence of pain and irritation there is but little or no general reaction subsequent to local disease in the majority of instances, and even severe operations are not followed by fever. In **Eczema** from iodoform the result—complete cure in

twenty-four hours—exceeded all expectation. In eczema humidum of mycotic origin the healing was rapid and sure. Externally this drug is used as a powder, in 10, 20, and 30 per cent. gauze, in ointment, in pencils, and in suppositories. The manner of use is similar to that of iodoform. The gauze can be sterilized at 230° F. In many cases irrigation of the wound may be omitted, the field of operation being cleansed with sterilized pads. To insure contact, all scabs, crusts, scales, pus, detritus, necrosed tissue, and blood-clots must be carefully removed. In support of the above propositions the author cites twenty-three instances of the use of the drug.²

REFERENCES.—¹"Wien. med. Blätt.," Nos. 1, S. 6; 2, S. 26; 3, S. 43, 1897; "Amer. Journ. Med. Sci.," Jan. 1897; ²"Med. Ann.," p. 91, 1897.

Electro-Therapeutics.

BY A. D. ROCKWELL, A.M., M.D., NEW YORK.

THE value of electricity in **Neurasthenia** is but indifferently appreciated even by the neurologist.

The fundamental principle underlying all the reconstructive and curative effects of electrization is its power over nutrition.

The neurasthenic patient looks so well, is frequently so plump and healthful in appearance, that it is common to say of him 'that he is well nourished,' 'that his nutrition is good.' This, however, cannot be.

The morbid fears, the strange and persistent sensory symptoms, the vacillation, the feeble powers of endurance—all point to deficient nutritive activity; and whether we regard the pathologic change in the cell to be due to fatigue, to inanition, or to direct toxic influences, the processes of metabolism are undoubtedly defective both in constructive and destructive power. Few facts are more clearly established than the influence of electricity—first upon the metabolic function of the body, and secondarily over nutrition. Through physiologic experiment and chemical analysis, we know of its effects upon metabolism; through clinical experience and observation, upon nutrition. Every manifestation of electricity possesses this power in greater or less degree, and it is unwise to select and dwell upon any one form as the special medium through which nutritive effects are best obtained. It is through the mechanic, chemic, and physiologic powers of electricity that we influence nutrition, and that form and method of treatment which in the most thorough manner combines these effects, as indicated in individual cases, will prove the most effective. In addition to the more general methods of electric treatment, now so well known and understood, the writer has more recently very thoroughly tested a method of treatment that for want of a better name he has termed 'the depolarizing method.' The idea is to altogether eliminate the action of the undesirable pole. This is accomplished by using for the indifferent electrode one that has a resistance as great or greater than the portion of the body included in the circuit.

To be convinced that by this method the characteristic action of each pole of the galvanic current becomes accentuated is easily demonstrated by physiologic experiment on the frog. Still further,

physiologic experiment clearly demonstrates through methods of accurate measurement, that it is not alone polar action, but current direction as well that is important in electric applications. As it is possible by means of the use of the depolarizing electrode (*Fig. 1*) to eliminate polar effects, so also one can readily eliminate either the ascending or descending effect, as well as demonstrate their difference.

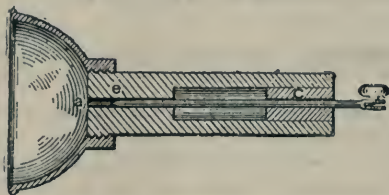


Fig. 1.—Depolarizing Electrode.

To determine the therapeutic value of the depolarizing method of treatment is a more difficult matter; but in a number of persistent, local neurotic conditions, as facial spasm and the various forms of tremor, marked relief has been observed to follow the depolarizing treatment, after failure of other methods. But it is in neurasthenic conditions that the depolarizing method has yielded the best results. In a certain class of hyper-sensitive patients, where the vitality is low, and the powers of reaction feeble, the exclusive use of the anode, applied to brain and cord, or to the region of the cilio-spinal centre, gives rise to depressing effects, somewhat similar to those resulting from the use of baths of low temperature.

Neuralgic symptoms have supervened, with impaired circulation and cold extremities. So too, where sedation is indicated rather than stimulation, the injudicious and prolonged use of the kathode, with an ascending direction, has seemed to do harm rather than good.

Regnier concludes as follows in regard to the treatment of neurasthenia by electrization: (1,) In general neurasthenia, galvanization, faradization and franklinization give equally good results; (2,) In spinal neurasthenia, galvanization or electric friction to the spine gives the best results; (3,) In the dyspeptic form, galvanization by the method of Massey, or franklinization by that of Baraduc; (4,) In the local form, the static breeze is indicated in preference to other methods.

In a communication to the Société internationale de Physique, May, 1897, D'Arsonval describes an improved apparatus for high frequency currents, saying: (1,) That the strangest and most striking effect of high frequency currents is the total absence of action upon the sensibility. Even when their intensity is very great, they produce in passing through the body, neither conscious sensation nor the slightest movement, and the remarkable phenomenon is observed of 125 volts and 1 ampère passing through two persons, illuminating to incan-

descence, four lamps held between them. The sensation is *nil*. Even 3 ampères can be used, but up to and beyond this point a disagreeable heat sensation is produced in the wrists.

(2.) That they exercise a most remarkable influence in exciting nutritive changes and cellular activity. In analyzing the results of respiratory combustion in man and animals after the action of high frequency currents, it is found that there is a considerable increase in the amount of oxygen absorbed and carbonic acid exhaled. By the aid of an apparatus called *anémo-calorimètre*, he was able to demonstrate an increase of the body heat thrown off.

(3.) Although high frequency currents affect not general sensibility or muscular movement, we are not to conclude that they have no influence over nervous action. The vaso-motor nervous system upon which depends the contraction of veins and arteries, are eminently excitable to these currents. Under their action one sees, for example, in the rabbit, the vessels of the eyes rapidly dilate, as after the section of the great sympathetic. This effect is followed a little later by energetic contraction. The Marey's sphygmograph and Potain's sphygmomanomètre, applied to man, give similar results.

(4.) It is not alone through the nervous system, or vaso-motor centres, that high frequency currents excite vital functions. They act on the cells themselves and directly on the protoplasma. Acting upon the bacilli they plainly attenuate them. The function chromogene is at first suppressed, and at the end of half-an-hour the bacilli die.

In an article entitled "*Recherches sur les effets Thérapeutiques des Courants de Haute Fréquence*," Boinet and Caillol conclude after careful tests that the application of currents of high frequency act most efficaciously in relieving both general and local diseased conditions. It is but of little service in glycosuria and albuminuria, but acts favourably on functional spasmodic motor troubles, as **Chorea**. It produces no permanent good results in lead palsy, hemiplegia, exophthalmic goître, lymphadenoma, or syphilis. It gives good results in neurasthenia.

Bonome and Viola have utilized high frequency currents to produce the **Streptococci Antitoxin**. The virulence of the culture in bouillon and human serum or ascitic fluid was from $\frac{1}{300}$ to $\frac{1}{800}$ for a rabbit; death occurring in four days. They conclude that alternative currents of high tension render the virulent culture of streptococci pyogenes inoffensive, without altering the chemical reactions of the culture or modifying the morphology of the micro-organism. The electricity acts principally on the liquid part of the culture, on the toxin in solution; the microbes themselves living for more than two weeks in

the electrized culture. The antitoxin thus obtained has the same effect as the serum of immunized animals; but is more intense, since it neutralizes ten times its volume of virulent culture.

In a well considered article on **Infantile Paralysis**, Larat refers to and combats the objection to the use of electricity in this disease, based upon the admitted impossibility of restoring the obliterated cells of the anterior cornua. Clinical experience has shown that persistent and intelligently directed electric treatment accomplishes much in this affection, and Larat accounts for this by the altogether plausible suggestion that in the beginning and long thereafter many of the cells are simply diseased and not thoroughly disorganized. The progress of destruction is arrested by improving the condition of the cord in two ways: (1,) By galvanization of the spine; (2,) By exciting the functional cavity of the paralyzed muscles. The vital energy of the trophic cells is closely associated with muscular activity, and to artificially stimulate the functional activity of the motor nerves and muscular fibre is the best way to quicken the nutrition of these cells.

Recent clinical experience has yielded some excellent results in the electric treatment of those most obstinate skin diseases—**Psoriasis** and **Eczema**. The idea is to treat these conditions not so much as skin as nervous diseases. If the origin of psoriasis is not syphilitic the static breeze is distinctly beneficial by exciting the vaso-motor nerves, regulating the local circulation, and modifying the nutrition of the skin. Other confirmatory reports are given by Doumer, Bordier, Guilloy, Lecercle and Dignat.

According to F. B. Bishop the static vibratory current is exceedingly efficacious in those cases of functional nervous diseases where the patient either from necessity or inclination leads a sedentary life, where metabolism seems sluggish, the skin pale, the hands and feet cold and clammy. To more effectually administer this excellent method of treatment, he has recently devised a contrivance called the static cage, composed of coarse galvanized iron wire cloth, with tinsel brushes fastened to the inside of the cage. Twenty minutes a day of this general vibratory current is usually accompanied by a feeling of comfort; the skin becomes warm and moist, the face assumes a healthy colour, the kidneys become active, the appetite keener, the sleep sounder.

Debedat gives a most interesting report of the electrolytic treatment of a **Cystic Tumour** of the tongue in a child of three months. The cyst was tapped but filled again, rendering nourishment almost impossible. Needles were introduced, and from 10 to 15 milliampères used, resulting in complete disappearance of the tumour.

J. McFadden Gaston reported before the American Surgical Association the successful treatment by electrolysis and **Cataphoresis**, combined with the internal use of Donovan's solution, of a case of sarcoma. The patient, a lad of twelve years, was suffering from a growth in the hypogastric region. An exploratory incision was made, and the result of a careful examination of the specimen with the microscope indicated that the tumour was a small round-celled sarcoma. Having no means of estimating the voltage or amperage the operator was guided only by the number of cells, using from six to thirty ordinary zinc carbon fluid cells. Donovan's solution was used externally at the positive pole, while a needle attached to the negative was introduced into the substance of the tumour. After encircling the entire tumour with the punctures, the needle was dispensed with, and another sponge electrode substituted for it. After eighteen months of treatment no trace of the disease, constitutional or local, remained.

Contributions to the subject of **Roentgen Photography** in diagnosis have been innumerable. Among those relating to the use of static electricity, may be mentioned an article by Monell. He describes what is termed the convective discharge for the production of the X-ray. With tubes properly prepared, no sparking or noise is necessary; the danger of broken tubes is obviated because of stress and strain between the discharging rods, and the penetrating and illuminating effects of the ray are increased.

Laurie and Leon, of London, report a series of experiments in museum specimens with a view to determining how far different calculi were opaque to the X-rays, and comparing their opacity with flesh and bone. The result showed conclusively that calculi composed of oxalate and phosphate of lime were more opaque than bone, uric acid calculi of almost the same opacity, and gall stones slightly more opaque than flesh.

Mr. Henry Morris confirms these results, which seem to show that there should be no difficulty in photographing stones in the bladder or kidney.

In the case of a boy, aged eight years, who had symptoms of vesical calculus, an exposure of seven minutes revealed a calculus a little over an inch in diameter. A few days later lithotripsy was performed. The detritus was composed principally of uric acid.

In order to get some reliable data as to X-ray injuries, N. Stone Scott sent a circular to most of the leading medical and electrical men in the United States who are doing X-ray work, asking for particulars of X-ray injuries. The questions asked included the kind of apparatus, length of spark, number of exposures, distance of platinum from the

part exposed, and injuries relating to the characteristics of the injury itself. Some fifty personal replies were received ; one quarter of these report four thousand five hundred cases, and, since a large number of the leading men in X-ray work are to be found among the writers of the three-quarters giving no estimate of the number of cases examined, it is certainly not an over-estimate to say that this report includes at least twenty thousand examinations, exclusive of those made by X-ray exhibitors. This list contains thirty-one cases of injury, or one in about thirteen hundred. The symptoms of all cases, except the few where deeper structures were supposed to have been affected, present the picture of a dermatitis, the distinctive feature of which is its slow onset and tendency to assume a chronic form. The first symptoms appear as a rule, in from three to seven days. The skin directly over that strongest source of X-rays—the platinum terminal—first commences to swell, becoming red and painful ; this gradually extends to parts further from the source of the rays, even to those parts not directly exposed. The pain is of a deep-seated, dull aching character (although some cases run their course without pain). Vesicles then appear filled at first with a serous exudate and purulent material ; in severe cases a sphacelus forms which is gradually thrown off, leaving a raw granulating surface slow to develop and slow to heal.

Freund, of Vienna, has used the X-rays as a depilatory. The experimenter tried them upon a boy whose spine was hidden by an abundant crop of hair, and the result was that the hair vanished. The boy was shown to the Medical Society in Vienna, with photographs of his condition before and after the treatment. The permanency of the cure may be questioned, as similar experiments have shown that after the removal of the hair by X-rays, the follicles after a time appear to be stimulated and the hair then grows more vigorously than ever.

A new combination volt graduator (*Fig. 2*) for adapting the incandescent current to medical purposes has been devised by W. J. Shields, of New Wilmington, Pa., and besides being peculiarly well adapted for the purpose has some points of excellence not possessed by others. The "volt graduator" comes under the class of shunt controllers, but is radically different from those in common use.

A most important feature of the instrument is that the current intensity is regulated entirely by varying the electro-motive force on the fall of "potential" principle, instead of varying the resistance by means of a rheostat. The range of the instrument is from 0 to 75 volts, and the electro-motive force may vary through this entire range, with the consequent variation in current intensity, without re-adjustment or change of connection, simply by moving a lever arm over

contact points, opposite which is a scale graduated in volts. The electro-motive force changes 1 volt at a time up to 30 volts, and 3 volts at a time from 30 to 75 volts. Special instruments for cataphoresis are made with a much finer degree of graduation. The conductor between contact points is wound non-inductive, and as there is no breaking of the circuit, the shock due to a change in electro-motive force is imperceptible.



Fig. 2.—New Combination Volt Graduator (Shield's).

By turning a switch a change from the galvanic to the faradic current or *vice versa* is made, the faradic current being controlled with respect to electro-motive force by the lever arm in the same manner as the galvanic. By turning another switch the instrument is adjusted for supplying a comparatively strong current at a low voltage, suitable for lighting miniature lamps and operating high tension coils, electric mallets, etc.

In the simplest form of the instrument there are but two binding posts for electrodes, from which the current for all purposes is taken. On the complete instrument there is a third binding post, and by connecting one electrode to this post, and the other electrode to one of the other posts, a stronger faradic current may be obtained controlled in the usual way; and then, by moving forward the lever arm, an uninterrupted galvanic current is sent through the electrodes, thus

giving the faradic superimposed upon the galvanic, with each under independent control. The instrument is, when so ordered, equipped with a milliampèremètre which is automatically cut out of the circuit when the strong current for miniature lamps is in use.

The instrument is supplied with the usual pole changing device. A compass indicates the duration of the current. The remote possibility of a high potential circuit coming in contact with the main, supplying the current to the instrument, is provided for by an automatic short circuiting device.

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Hypnotism and Suggestion.

BY CHARLES LLOYD TUCKEY, M.D.

DURING the last few years hypnotism has met with increasing favour at the hands of the medical profession, prejudice against it has to a great extent died out, and it has come to be regarded as a possible remedy in many cases which resist ordinary treatment.

In France the "Revue de l'Hypnotisme" is in its eleventh year of publication* ; in Germany the "Zeitschrift für Hypnotismus" is in its fifth year ; and in Belgium the "Journal de Neurologie et d'Hypnologie" is in its third year. In America a special medical journal is also published, "The Hypnotic Review" (Chicago). In England there is no special journal, but a good many practical and theoretical papers on therapeutic hypnotism are to be found in the ordinary journals and the transactions of the various societies.

When it is considered that it is little more than ten years since Bernheim published his first book, as the result of his investigation of Liébeault's practice at Nancy, it is evident that for a new system of treatment unusual progress has been made. This is due partly to the high standing of the pioneers of the treatment—most of the contributors to the Continental journals being hospital physicians of recognized position—and partly to the increased importance which is now attached to the psychic factor in disease.

In regard to the theory of the causation of the hypnotic state, but little has been added to our knowledge during the last few years. There is inhibition of some of the highest cortical centres with corresponding dynamo-genesis of other centres, and it is this redistribution of nervous energy which is probably the source of cure.

Liébeault supposes there is excess or deficiency of nervous energy in one direction or in one organ in disease—he classifies diseases according to this theory—and he claims that hypnotism enables us to correct this dislocation and to bring about a state of nervous equilibrium in which there is re-establishment of functional harmony (Desplats) and *restitutio ad integrum* (van Eeden).

* Dr. E. Bérillon is the Editor and has a large *Clinique* (Institute Psycho-Physiologique de Paris), 49, Rue St. Andre-des-Arts, at which he welcomes medical men from all parts.

Bérillon shows that arterial tension progressively increases during hypnosis, and he attributes the good results seen from the treatment in cases characterized by low tension pulse to this effect on the circulation. Bernheim attributes all the effects of hypnotism to suggestion, expressed or understood, but other observers have come to attach great importance to the hypnotic state *per se*.

During hypnotic sleep the nervous energy, which in the waking state is being dissipated in all directions, is stored for future use, and the system is placed in a position most favourable for cure. Wetterstrand, Auguste Voisin and others, acting on this theory, have treated a large number of their neurotic patients by prolonged hypnosis—in many cases keeping them entranced for as long as six weeks.¹ In cases of neurasthenia, hysteria, and epilepsy this method has been attended with marked success. The patient lies perfectly quiet and at rest, except when aroused by suggestion to take nourishment and perform the natural functions.

The senseless and objectionable exhibition of persons at public halls in a condition of prolonged hypnosis, which was a popular entertainment a couple of years ago, presented, therefore, even when genuine, no feature of novelty.

In regard to the therapeutic uses of hypnotism—our experience is being rapidly enlarged, and the special journals referred to contain each month records of clinical cases. Van Renterghem and van Eeden, of Amsterdam, published in 1894 a record of their practice for four years, 1889-1893, giving a short *résumé* of one thousand and eighty-nine consecutive cases. The list includes all varieties of disease from tabes dorsalis and phthisis to functional neuralgia and headache, and this is a most useful work of reference. Bernheim subjects a large proportion of his patients at the Hôpital Civil at Nancy to hypnotic treatment, and finds it beneficial as a palliative in many incurable diseases such as locomotor ataxy and cancer. He contends that it subdues the sympathetic and nervous symptoms, and reduces the disease to its pathological expression. For instance, in phthisis he finds it improves the appetite, gives sleep, subdues cough and nervous restlessness, and acts as a general tonic and calmative.

It is, however, in **Nervous Diseases** of functional origin that hypnotism finds its chief field. It should be thought of in cases of hysteria, including hysterio-epilepsy, aphonia, paralysis, contractures. In chorea and choreiform movements, blepharo-spasm, occupation neuroses such as writer's cramp, nervous dyspepsia, neurasthenia, insomnia, spasmodic asthma, vomiting of pregnancy, hiccough; in diseases where pain is a prominent feature as functional neuralgia, sciatica, angina

pectoris, tabes dorsalis. In **Diseases of Women** Dumontpalier of the Hôtel-Dieu attaches great value to hypnotism and finds it curative in many cases of amenorrhœa, menorrhagia, dysmenorrhœa, ovarian irritation, vaginismus. In rheumatic affections such as torticollis, lumbago, and very obstinate deep-seated rheumatism of the deltoid, I have often seen it rapidly curative when combined with manipulation. Braid found hypnotism enabled him to cure old sprains and adhesions about joints, and modern experience confirms his practice.

Dr. Woods,² superintendent of Hoxton House Asylum, has reported a series of two hundred cases he has treated by suggestion, and this paper is a most valuable contribution to our practical knowledge. He states that he finds suggestion curative in many cases of chorea and other forms of spasm, neuralgia, especially trigeminal and sciatica, headaches, insomnia, rheumatism, asthma, palpitation, nervous dyspepsia, chronic alcoholism, various forms of mental disease, especially melancholia, and some cases of epilepsy. His series contains cases of all those maladies.

In **Surgery**, hypnotism may be used at times as a substitute for anæsthetics. A well-known hospital anæsthetist tells me he has frequently produced profound anæsthesia in selected subjects by suggestion alone, aided, of course, by his paraphernalia.

Esdaile, Presidency Surgeon at Calcutta, performed over two hundred capital operations on natives under hypnotism in the pre-chloroform days; but the facility with which anæsthetics are given and the difficulty and uncertainty of inducing profound hypnosis in many cases renders this use of hypnotism less valuable. It can, however, sometimes be used when anæsthetics are counter-indicated, and it should be thought of when it is found that the patient is an exceptionally good subject. In **Midwifery**, hypnotism has been found very useful. It often hastens labour, and it has this advantage of chloroform; it does not interfere with voluntary muscular contraction, but on the contrary the accoucheur may, by suggestion, direct and control the patient's efforts.³ Delbœuf, of Liège, asserts that wounds heal more readily in hypnotized subjects. It is generally impossible to hypnotize a person for the first time in the state of mind immediately before an operation or confinement; so in these cases the patient must be prepared for the ordeal by a course of previous sittings. There are some advantages over drug anæsthetics; for instance, there is no subsequent sickness or headache, and the pain subsequent to the operation or confinement can also be lessened or prevented altogether by suggestion.

In the treatment of **Insanity** Auguste Voisin, of the Salpêtrière,

continues to be an enthusiastic advocate of hypnotic treatment, and he reports cases of mania, delusional insanity, melancholia, agoraphobia, claustrophobia, and suicidal mania successfully treated.

Forcl points out that by hypnotism we attempt to influence disordered function or diseased organs by suggestion through a healthy brain, and therefore, *a priori*, he does not expect benefit from the treatment when the brain itself is diseased and there is no *point d'appui*. Be this as it may, it is certain that it is generally impossible to hypnotize persons suffering from serious mental disease. The attention cannot be fixed, and the patient cannot be got to understand what it is desired to do. Voisin sometimes succeeds at the Salpêtrière, apparently by his extraordinary patience and hopefulness. It is often possible to hypnotize persons during their lucid intervals and to prolong the sleep over dangerous periods, *e.g.*, periodical epilepsy and catamenial excitement (Voisin, Wetterstrand).

Hamilton Osgood,⁴ of Boston, U.S.A., records four cases of **Chronic Eczema** and one of **Chronic Dermatitis** after frostbite of exceptional severity, which he cured by hypnotic suggestion after all other methods had failed. As it has been found possible to raise blisters by suggestion in exceptionally sensitive subjects such a curative action on the skin is not so remarkable as would appear at first sight. I believe lupus is one of the diseases they pride themselves most on curing at Lourdes, and suggestion is apparently one explanation of these cures.

Bramwell⁵ reports a remarkable case of **Localized Hyperhidrosis** which he cured by hypnotic suggestion. The patient, a girl of fifteen, was brought to him to be treated for headache. While she stood and talked to him the perspiration streamed from a patch of skin about two inches in diameter on the back of the wrist. The affection had existed all her life. She proved very hypnotizable, and the hyperhidrosis was rapidly cured as well as the headaches.

Gorodichze⁶ reports four cases in which he was successful in preventing **Sea-Sickness** by hypnotic suggestion previous to the voyage. In one case the patient, who had never been to sea without suffering, has been ever since an exceptionally good sailor. Liébeault and Osgood have had similar experience, and I have found it useful in two cases.

Van Renterghem and van Eeden have been very successful in treating **Stammering**, and so has Wetterstrand. I quickly cured a schoolboy of fifteen, and I have found the treatment beneficial in several other cases, especially in young people.

In consequence of Krafft-Ebing's⁷ reference in his well-known book

to hypnotism as being the only remedy which holds out any prospect of cure in perverted sexuality, I have seen a number of these cases (twelve). In only one has it proved curative. This morbid condition is evidently very much more common than is generally supposed, for the patient keeps his secret to himself unless he has some hope of cure. Schrenk-Notzing has cured several cases. I have cured one case of excessive morbid blushing in a youth of eighteen whose life was made a burden to him by this failing, and I once removed in five minutes a strident laryngeal hysterical cough which had lasted for five years and greatly interfered with the lady's occupation of teacher.

In the less pronounced forms of mental trouble hypnotism offers a hopeful outlook. Milne Bramwell has published an interesting series of cases of "**Imperative Ideas**" cured by hypnotism, and it is to be noted that, in the symposium of which his paper forms a part, his are almost the only cases of cure recorded.

Bérillon⁸ gives a series of cases of **Folie de Doute** occurring in business men, incapacitating them for their work, cured by suggestion, and I have recorded three cases of somewhat similar character affecting professional musicians successfully treated.⁹ Such cases are usually more common than is generally supposed. The patient looks upon cure as hopeless, and struggles on rather than confess his weakness to no purpose.

It can be readily understood how states of ill-health dependent on an idea can be cured by hypnotism. One has only to replace the morbid idea by healthy suggestion and the thing is done.

Russell Sturges,¹⁰ of Boston, has published a series of interesting cases not only of mental but of bodily illness starting from shock, *e.g.*, the case of a lady who quarrelled with her father immediately before his sudden death, and so reproached herself that she took to her bed and became a confirmed and unhappy invalid with all sorts of neurotic troubles. He removed the morbid ideas and replaced them by stimulating and healthy suggestions, and in a short time the woman was restored to active life. Neurasthenia often starts from nervous shock or breakdown, and is frequently curable by hypnotic treatment.

Another field of great promise for hypnotism is the borderland of insanity occupied by the **Alcohol and Drug Habits**. I related at the International Congress of Psychology at Munich, 1896,¹¹ my experience in sixty-five consecutive cases of chronic alcoholism treated during seven years, 1888-95. Fifteen of these have been cured, *i.e.*, they have remained consistent abstainers for over two years, two relapsed after apparent cure for two years, seven have been permanently benefited, thirty relapsed after temporary improvement,

and ten were unaffected. Some of the results were startling in their thoroughness, *e.g.*, one man of forty-five had been a chronic soaker for over twenty years. He had developed Bright's disease and had had two attacks of uræmia. He has had no relapse since the first day he was hypnotized, seven years ago, and enjoys fairly good health though there is still slight albuminuria. Another man in a good position had recurrent attacks of dipsomania during which he would leave his wife and home and spend his time drinking in the lowest haunts, only returning home when his money was spent and he was too ill to drink any more. This patient has had no relapse since he was first treated, four years ago. Of course, such cases are exceptional, and there are many corresponding disappointments. But the value of the treatment in chronic alcoholism is demonstrated, and in suitable cases it enables the patient to continue his business and to be saved from the enervating and expensive confinement of a retreat.

As in all other forms of treatment of alcoholism, the co-operation and good will of the patient are essential to success, and there must be good material at bottom to work upon.

Wetterstrand¹² records a series of thirty-eight cases of morphinomania, of which he successfully treated twenty-eight by hypnotism. Voisin reports two cases of cure. Forel, of Zurich, von Schrenk-Notzing, of Munich, and other observers have had similar results. I have found it very helpful in two cases in relieving the restlessness and sickness consequent on leaving off the drug and in shortening the period of distress.

I have been able to cure excessive smoking with resultant dyspepsia and nervous symptoms very quickly by hypnotism. Wetterstrand reports three cases in his book, and there are other cases reported in the hypnotic journals. A feature of the treatment in these cases is that one is often able to instill a dislike for the drug in the patient's mind, and so lessen the chances of relapse.

In all the applications hitherto touched upon hypnotism is a useful addition to our armamentarium, but I have reserved for the last the consideration of its use, which gives it, I believe, a unique place among therapeutic systems. I refer to its employment as an educational and reformatory agent, and **a Corrector of Bad Heredity.**

Bérillon, as Government Medical Inspector of Public Asylums, has special facilities for studying abnormal children, and he has employed hypnotic suggestion very largely in correcting vicious tendencies.

Of course, all education is based on suggestion, and normal children are ready enough to receive and act upon the ordinary suggestions of their parents and teachers, for the natural bias is towards healthy

development and right conduct. But when bad heredity or evil influences have given a bias towards depravity hypnotism may be necessary to correct the tendency and induce a healthy tone. Children are generally easily hypnotized and readily receive hypnotic suggestion, "wax to receive marble to retain." All that is necessary is that they shall be sufficiently intelligent to understand the object of the treatment; imbeciles and idiot children are not hypnotizable. Bérillon has made a special study of degeneration in children, and among the signs of this condition he reckons nail-biting, nocturnal enuresis, masturbation, and excessive pusillanimity. These affections are very amenable to hypnotic treatment.

Bérillon has recorded several cases of kleptomania in the "*Revue de l'Hypnotisme*." I have treated three cases, two successfully.¹³ Wetterstrand, Voisin and others report similar experiences. I have recently reported a case of mischievous morbid impulse in a child cured by suggestion.¹⁴ The patient, a girl of thirteen, had for seven years been addicted to cutting and destroying her own and other people's clothes, and neither coaxing nor punishment had the least effect upon her. She was rapidly cured by suggestion. Kingsbury, of Blackpool, gives cases in his book where he has succeeded in entirely changing the characters of perverse and vicious children by hypnotic influence. Voisin even records cases of adult women of evil life whom he has reformed by hypnotism. The question of free-will here comes in, and the point is to what extent is it right to exert influence of this kind. I think there can be no doubt as to the answer, if hypnotic suggestion is only employed after due consideration with the consent of the friends and only to suppress morbid and evil tendencies and evoke good and healthy ones. It must be always remembered that hypnotism creates nothing, but only enables us to bring out what is latent in the subject. The hypnotist plays on the brain as the musician on an instrument, and may evoke either harmony or discord.

There are many erroneous ideas abroad about hypnotism, even among medical men. For instance, it is often supposed that profound somnambulism with amnesia on waking is necessary to success. If such were the case, few of us would care to devote our time to hypnotism, for only about 10 per cent. of ordinary humanity become somnambulant. All that is required is increased 'suggestibility,' and though, as a rule, the deeper the hypnosis the greater the suggestibility, it is found in practice that a slight degree of drowsiness with the attention taken off the environment and concentrated in the desired direction is sufficient for therapeutic purposes. At least 85 per cent. of sane people are susceptible to the necessary degree.

Woods finds he can cure many of his patients by suggestion alone without hypnotism, and, of course, successful doctors are always using suggestion in their practices.

Many people suppose that only the weak minded and hysterical can be hypnotized. Such is not the case. Mr. Hugh Wingfield found Cambridge undergraduates exceptionally good subjects, and I suppose these young men are among the pick of the country in point of physique and intelligence. An infirmary physician once asked me to demonstrate the treatment in his hospital. He selected for me three subjects whom he considered suitable—broken down, hysterical women whose teeth chattered with fear when I went near them. I declined his selection and chose instead himself, his two assistants, and a nurse. They all proved good subjects except the second assistant, who resisted my efforts. Hysterical patients require infinite pains and patience, and very often, in spite of all we can do, morbid auto-suggestion is too strong and renders our efforts ineffectual. Conditions must be favourable and the surroundings sympathetic. Many patients hug their diseases and symptoms and will not receive healthy suggestions, and our efforts are often annulled by the counter-suggestions of sceptical and hostile friends. Hence it is wise, if possible, to have difficult cases under our control in a hospital or home, as in the Weir-Mitchell treatment. Our object is to influence organs and functions through the highest cortical centres. Hughlings Jackson has demonstrated that all parts of the body are ultimately represented in those centres—every organic cell and every muscular fibre has its cortical representative and can be influenced through it. These centres are also the seat of the psychic faculties, and hence mind can influence body. We appeal to them through the imagination, and this must not be treated slightly.

There is one real and very unfortunate drawback to hypnotic treatment—its inapplicability to a certain proportion of cases. Theoretically, it should be the ideal treatment for "phantom limbs" after amputation, and I believe it offers the best chance of cure in these cases. I have tried to apply it in one case of phantom hand and another of phantom foot; after repeated attempts we had to declare both patients unhypnotizable. Chloroform, bromides, and other drugs have been tried as aids to hypnosis. I confess I have not found much help from them, though Voisin, Wetterstrand and others think they are sometimes useful.

My own ten years' experience of hypnotism corroborates the much more extensive experience of Liébeault, Bernheim, Forel, Dumontpallier, Bérillon, von Schrenk-Notzing, Wetterstrand, van

Renterghem, Morselli, Hamilton Osgood, Milne Bramwell, Woods, Kingsbury, and a hundred other physicians in all parts of the world, to the effect that medical hypnotism is a perfectly safe and harmless procedure, and none of us have ever been able to discover a single case of evil consequences following its legitimate employment. Such practical testimony should outweigh the theoretical fears of its opponents.

That hypnotism in bad hands would be a potent agent for evil no one will deny, but to contend that its general recognition and use by medical men would lead to its abuse is, I consider, to cast an unmerited slur upon an honourable profession.

The subject is so large and the literature of hypnotism increases with such rapidity that it is impossible to do it justice in a short sketch. The practitioner who desires to know more about it is referred to the following text books and periodicals :—

Liébeault.—“Thérapeutique Suggestive, son mécanisme, etc.” Paris, 1891.

Bernheim.—“Hypnotisme, Suggestion, Psychothérapie.” Paris, 1891 ; English translation by Dr. Herter, of New York.

Van Renterghem and van Eeden.—“Psycho-Thérapie.” Paris, 1894 (a detailed account of five years’ clinical experience).

Wetterstrand.—“Hypnotism, and its Application to Practical Medicine.” Translated from the German. New York and London (Putnam’s Sons), 1897.

Kingsbury.—“The Practice of Hypnotic Suggestion.” 2nd Ed. Wright & Co., Bristol, 1894.

Tuckey.—“Psycho-Therapeutics, or Treatment by Hypnotism and Suggestion.” 3rd Edition. London, 1891.

Milne Bramwell.—“On the Evolution of Hypnotic Theory.” “Brain,” 1896.

“On Imperative Ideas.” *Ibid.*, 1895.

Woods.—“The Treatment by Suggestion with and without Hypnosis.” “Journal of Mental Science.” April, 1897.

Voisin.—“Emploi de la Suggestion, Hypnotique dans certaines formes d’Aliénation mentale.” Paris, 1897.

Dixon-Savill.—“Clinical Journal,” 1897.

REFERENCES.—¹ “Rev. de l’Hypnotisme,” March, 1891, March, 1897 ; ² “Journ. of Ment. Sci.,” April, 1897 ; ³ See cases of Dr. Kingsbury’s in “Brit. Med. Journ.,” 1890, and Dr. Jane Walker’s “Rev. de l’Hypnotisme,” 1896 ; ⁴ “Rev. de l’Hypnotisme,” 1895 ; ⁵ *Ibid.*, June, 1895 ; ⁶ “*Ibid.*,” 1896 ; ⁷ “Psychopathia Sexualis” (English translation) p. 351 ; ⁸ “Rev. de l’Hypnotisme,” 1895 ; ⁹ *Ibid.*, 1896 ; ¹⁰ “Boston Med. and Surg. Journ.,” 1894 ; ¹¹ “Med. Pioneer,” 1896 ; ¹² “Zeitschrift für Hypnotismus,” 1896 ; ¹³ “Prov. Med. Journ.,” 1894 ; ¹⁴ “Edinburgh Med. Journ.,” 1897.

PART II.—NEW TREATMENT.

The Dictionary of New Treatment in Medicine and Surgery, 1898.

ABDOMINAL SURGERY.

Priestley Leech, M.D., F.R.C.S.

Drainage.—Clark¹ brings forward clear clinical and scientific evidence which supports the growing mistrust of the drainage tube in abdominal surgery. Mechanically it is not to be trusted. The presence of a tube handicaps the peritoneum in three ways : (1,) The normal peritoneal currents are disturbed so that the circulation of fluids and foreign matter towards the diaphragm is retarded ; (2,) An active inflammation is set up about the drain, limiting and impeding the action of the peritoneum ; (3,) In a few hours the general peritoneum is cut off from all participation in the work of absorption by the wall of adhesions around the drain. Sinuses and hernia not unfrequently follow the use of the tube, and infection through the tube may occur. The Mikulicz bag is not superior to simple gauze, except that it checks oozing more effectually. Lastly, in the John Hopkins Hospital the great frequency of the infection of drains, as demonstrated by bacterial examinations and the rarity of living pyogenic organisms in the diseased structures, has caused the almost complete abandonment of drainage as a means of removing infectious matters from the peritoneal cavity.

MESENTERIC CYSTS.—Moynihan² has a very good paper on this subject ; the text books scarcely mention mesenteric cysts and therefore this paper will find a permanent place in surgical literature. Excluding cysts (*e.g.*, those arising from the ovary or the head of the pancreas), which only become mesenteric by a later extension, the following forms have been described : (1,) Serous cysts ; (2,) Chyle cysts ; (3,) Hydatid cysts ; (4,) Blood cysts ; (5,) Dermoid cysts ; (6,) Cystic malignant disease—cystic sarcoma. In addition there are certain other pathological conditions of the lymphatics of the mesentery, *viz.* : Lymphatic varices, lymphatic nævus, and lymphangioma cavernosum of Weichselbaum.

(1,) *Serous Cysts* may be (*a*,) Unilocular (more common in the mesocolon and usually small); (*b*,) Multilocular cysts. The fluid contained in these cysts is a pale, clear, straw-coloured fluid, sp. gr. 1015 or 1016, alkaline in reaction, and contains a large amount of albumen. They may arise from a dilatation of a portion of a lymphatic vessel, probably occluded by some inflammatory disturbance, or they may arise from hæmorrhages between the layers of the mesentery.

(2,) *Chyle Cysts*.—These may be unilocular or multilocular. Fluid, a creamy white or yellowish liquid of alkaline reaction, sp. gr. 1012 to 1020. Microscopically white corpuscles in abundance are seen, and some immature red ones; fat globules in great quantity and a large proportion of very fine granular amorphous material. *Origin*: (*a*,) By dilatation of the lacteals of the mesentery; (*b*,) From degenerated lymphatic glands; (*c*,) Dilatation of the receptaculum chyli.

(3,) *Hydatid Cysts*.—Not very numerous in the mesentery. Fluid clear, watery, thin, sp. gr. 1007 to 1010; no albumen, a large amount of chlorides and an alkaline reaction. Scolices are generally present but may be absent.

(4,) *Blood Cysts* are almost always traumatic. A hæmorrhage into the mesentery may result in: (*a*,) A pure blood cyst; (*b*,) A sero-sanguineous cyst; (*c*,) Hæmorrhage into a pre-existing cyst; (*d*,) Hæmorrhage into a mesenteric growth; (*e*,) A solid tumour from absorption of the fluid constituents of the blood.

(5,) *Dermoid Cysts*.—Their origin is doubtful; they are not always primarily ovarian. They have only been found in women.

Cystic Disease is more common in women and may be found at all periods of life. The most characteristic signs are: (1,) Prominence of the fluctuating tumour towards the umbilicus; (2,) Great mobility, especially in the transverse direction and the possibility of rotation round a central axis; (3,) The presence of a zone of resonance around; and (4,) Belt of resonance across the cyst.

CLINICAL SYMPTOMS.—Some cysts are discovered during an operation for some more serious abdominal disease; they are generally of lymphatic origin and are of so small a size and so quiescent as to be of no clinical significance. The remaining cases, so far as symptoms go, may be classified under two headings: (1,) Chronic cases where complaint is made chiefly of an abdominal tumour; (2,) Those in which the onset of acute intestinal obstruction first draws the attention of the patient and practitioner to the abdomen.

(1,) *Chronic Cases*.—Symptoms are: (*a*,) Pain more or less acute according to rapidity of growth of the tumour; the pain is local in and around the tumour and radiating to the flanks, groin and thighs.

As a result of pressure on the intestine and consequent partial closure of the canal there are colicky pains due to contraction of the hypertrophied muscular fibres as they attempt to overcome the obstruction. There may be tenderness, but this is not common ; (*b*,) Intestinal disturbances ; constipation is the rule. There is vomiting sometimes, and very rarely there may be persistent and intractable diarrhœa.

(2,) *Acute Cases*.—The onset of cases belonging to this group is that of acute intestinal obstruction. There are the usual signs : vomiting, complete constipation, distension of the intestine, etc. There are no characteristics which distinguish a case of intestinal obstruction due to a mesenteric cyst from acute obstruction due to any other cause. There is one symptom that occurs both when acute and chronic symptoms are manifested, viz., general wasting, which is described as occasionally being extreme. It is presumably due to interference with the lacteals of the mesentery.

The causes which have been suggested as bringing about intestinal obstruction are : (1,) Irritation of solar plexus by pedicle of cyst (Collet) ; (2,) Compression of intestine amounting in some cases to gangrene (Sutherland) ; (3,) Formation of adhesions and strangulation by them ; (4,) Onset of acute peritonitis from rupture of the cyst or its pedicle (Charcot and Davaine) ; (5,) Strangulation over a band formed by the pedicle of the cyst (Moynihan).

Differential Diagnosis by physical signs already given. They are not uncommonly diagnosed as ovarian or parovarian cysts.

TERMINATIONS.—If not operated on may terminate in the following ways : (1,) Cyst, especially if hydatid, may retrogress or remain quiescent ; (2,) Perforation may occur into the intestine and contents of cyst be discharged ; (3,) Perforation of cyst or pedicle into the peritoneum and onset of acute peritonitis ; (4,) Extreme emaciation may end in death ; (5,) Acute intestinal obstruction may ensue.

TREATMENT.—Operative interference is indicated in both acute and chronic cases. After opening the abdomen the surgeon may : (*a*,) Stitch the cyst wall to the parietal peritoneum and open and drain the cavity ; (*b*,) Or remove the cyst after aspiration, either by cutting through the opening layers of peritoneum in the pedicle, inverting the edges and applying a series of Lembert's sutures, draining the peritoneum or not as may be seen fit ; or if no pedicle is found the peritoneum may be incised over the centre of the tumour and the cyst enucleated,

REFERENCES.—¹ "Amer. Journ. Obstetrics," April, 1897, quoted in "Brit. Med. Journ.," May 29, 1897. See also Editorial "Annals of Surg.," Aug., 1897 ; ² *Ibid.*, July, 1897.

ABORTION.

Theophilus Parvin, M.D., Philadelphia.

Cheron¹ asserts that **Thyroid Extract** is valuable in threatened abortion with hæmorrhage, and prevents the arrest of uterine involution after labour, and prevents, too, premature return of the monthly periods; moreover, it is of great importance as a galactagogue. In gynæcology it controls uterine hæmorrhages, whether caused by tumours, or by lesions of the appendages.

REFERENCE.—¹“Rev. méd-chir. des malad. des femmes.”

Thomas More-Madden, M.D., F.R.C.S., Dublin.

Dr. Helme,¹ of Manchester, has recently published a modification of Pelzer's procedure, which appears to be exempt from the drawbacks of the original method. He begins by injecting 1 ounce or 1½ ounces of **Glycerine** into the cervix uteri, making the injection very slowly, so as to allow the surplus liquid to escape. Within a quarter of an hour or so, marked softening of the cervix results without any uncomfortable symptoms, and the membranes become more or less separated from the uterine wall below, leaving a space into which a further quantity of glycerine can be injected without any risk of damaging the foetal membranes or producing partial detachment of the placenta. By repeating these injections every few hours, the expulsive forces of the uterus are called into play, and the case can then be left to itself. Apart from the value of the method in cases calling for the induction of premature labour, the injecting of glycerine into the cervix appears to offer a certain means of obtaining relaxation of the cervix in cases of rigid os, a condition which has always been the opprobrium of accoucheurs.

Dr. A. Dührssen² describes a new method of inducing abortion, as practised by himself in nineteen cases. In all cases under seven months, whether he wishes to empty the uterus of all its contents, whether of the entire ovum or of the placenta alone, or whether the os uteri is partly open or entirely closed, he packs the uterine cavity with as much **Iodoform Gauze** as it will contain, and then fills the vagina with **Salicylate Wadding**.

In a few hours the pains begin, and then cease in a few hours more, and at this time any bleeding present will also have ceased. When the pains have ceased it will be time to remove the tampons, and on doing so it will generally be found that the foetus and placenta are already in the vagina, or when the ovum is small in the balloon-shaped cervix, the internal os and fundus uteri being well contracted. In some cases the strength of the pains will have expelled the uterine contents and also the tampons through the vulva. The further

advanced the pregnancy is the more certain will be the activity of the tampons on the uterus. He thinks that for the cautious practitioner this will prove to be an excellent and safe method of emptying the uterus.

REFERENCES.—¹"Med. Press and Circ.," Oct. 14, 1896; ²"Ind. Med. Chir. Rev.," Aug. 1896.

ABSCESS (Peritonsillar). (See "Quinsy.")

ACHILLODYNYA.

[*Editorial.*]

Rossler¹ reports a number of cases of this painful affection of the foot, whose symptomatology is the following: The patient can neither stand nor walk without pain, which is referred to the insertion of the tendo-Achillis; the objective symptoms are a tumour at that point, slightly painful on pressure, of a hardness almost equal to that of bone. Relief is obtained by sitting or lying down.

The author has studied most carefully the pathology of this disease, making over two hundred and fifty post-mortem examinations, including thirty upon newborn infants. He found that very few bursæ are exempt from some chronic changes which are hypertrophic in character, with an increase in the periosteum and hyperostosis, the thickened periosteum sometimes showing patches of hyaline degeneration.

The acute form of the disease is simply more acutely inflammatory in character, with an hypertrophy of the surrounding adipose and cellular tissue, as well as that which lies within the bursa, the whole process resembling the condition found in arthritis deformans.

TREATMENT.—**Compression with Bandage and Moist Sponge** is recommended, or in more difficult cases, the opening of the bursa on the external aspect and packing with sterilized gauze.

REFERENCE.—¹"Deut. Zeit. f. Chir.," Band 12, Heft 3.

ACNE.

T. Colcott Fox, M.B.

J. Nevins Hyde¹ suggests a method of treatment, especially in indolent and intractable cases, by the use of a **Massering Ball**. He found good results from the use of G. H. Fox's method, viz., by raking away the comedones and pustules and *débris* of pus, blood, sebaceous secretion, and epithelium by means of a gynecologist's ring curette. There are, however, objections to this treatment, and it occurred to Hyde that the massaging element in this treatment was probably of value. He first operates on the skin with a disinfected needle and comedo-extractor until all pustules and sub-epidermic foci and conspicuous comedones are removed. The surface is then

rendered aseptic either with bichloride of mercury lotion or preferably with a weak solution of formalin. The "massering ball" is then rotated freely over the surface, and deep pressure made with the result of bringing into view further comedones which are, in turn, extracted. Lastly, a massage of the surface is practised with the ball by the aid of a salicylated cocoa-nut oil or sulphur ointment.

REFERENCES.—¹ "Journ. Cut. and Gen.-Urin. Dis.," March, 1896.

ACNE ROSACEA.

T. Colcott Fox, M.B.

Abrahams¹ recommends *local subcutaneous injections of 95 per cent. Alcohol*. Take a clean hypodermic syringe, with a clean, thin needle. Fill the syringe with 20 or 30 drops of 95 per cent. alcohol. Then select the part of the nose or cheek it is intended to treat, pinch it up, and make the injection. Do not use more than 30 drops or make more than three injections a week. The injection causes swelling and momentary anæmia of the area operated upon; then increased redness for half to three or four hours. Dilated vessels obliterate and the skin lesions disappear.

O. Betz² thinks well of the rectified **Oil of Turpentine** rubbed into affected parts once daily.

Ohmann-Dumesnil,³ after referring to the removal of any underlying constitutional factor and the careful regulation of the diet, says reducing agents or contractors of the capillaries are most in request, such as **Sulphur, Ichthyol, Resorcin, Salicylic Acid**, alone or in combination. The amount of active agent employed must be regulated according to the susceptibility of patient.

A good sulphur lotion is the following :—

R Calcis Vivæ	℥ss	Aquæ	℥x
Sulphuris Sublimat.	℥j		

M. Coque ad ℥vj, divide et filtra.

Apply the clear ruby red filtrate at night, and apply an ointment in the morning, or night and morning. In advanced cases **Electrolysis**, linear and quadrilateral **Scarifications** by Vidal's scarifier or Unna's micro-brenner modification of Paquelin's thermo-cautery, are called into play.

Lassar⁴ for "red nose" recommends : (1,) **Exfoliation**, for which purpose his favourite agent is a 15 to 20 per cent. resorcin paste; (2,) **Scarification**; (3,) Better still **Acupuncture**, done with forty points mounted on a solid disc 1 centimètre in diameter, which is worked by an electro-motor and stamping machine like that used in filling teeth.

In rhinophyma Lassar removes the hypertrophied tissue by ablation

or decortication, covering the surface with Thiersch grafts, or leaving it under **Iodoform Collodion**.

REFERENCES.—¹"Amer. Med.-Surg. Bull.," May 16, 1896; ²quoted in "Journ. des Praticiens," March 6, 1897; ³"Tri-State Med. Journ.," Sep., 1896; quoted in "Brit. Med. Journ.," ⁴"Derm. Zeitschr.," p. 489, 1895.

ADENOIDS.

R. Lake, F.R.C.S.

Anæsthesia is now almost universally accepted as being necessary for the efficient removal of their growth, besides being a far more humane proceeding than operating without.

Gardner¹ summarizes the combination of *oxygen with nitrous oxide gas* by saying it is not attended with risk to life; no preparation is required; hæmorrhage is not affected by it; jactitation and cyanosis are absent; any position may be assumed.

Hardie,² however, considers the anæsthesia, or rather period of unconsciousness from the use of gas, too brief. He prefers *ether*, a remark which is endorsed by Stoker.³ "In several recurrent cases I have treated, I find from my notes, that the first operation was done without an anæsthetic, or under nitrous oxide gas, and hence was likely enough too brief in duration to be thorough." So we may fairly assume that most operators prefer an anæsthetic, whether bromide of ethyl, chloroform, ether or other mixtures.

A. J. Gidette⁴ reports three cases of torticollis due to these growths, with hypertrophic rhinitis, and relieved by operation. This communication is one which should be remembered, as in early cases of torticollis, adenoids if present should be removed and the case observed and reported.

Dundas Grant⁵ points out the occasional simulation of adenoids by anterior projection of the cervical vertebræ, and the difficulty in removing them when occurring in patients subject to this deformity.

Pluder and Fischer⁶ have brought together statistics of all adenoids examined for tubercle; seventeen cases of primary involvement of the pharyngeal tonsil being found out of one hundred and sixty-one examined. From this we see another strong argument for the employment of surgical means early in life.

Turner and McBride⁷ show a percentage of 3 per cent., but consider Dieulafoy's 20 per cent. nearer the mark; they note the effect on cervical adenitis as being by no means constant.

REFERENCES.—¹"Med. Record," Jan. 23, 1897; ²Ibid., Jan. 16, 1897; ³"Clin. Journ.," Oct. 14, 1896; ⁴"New York Med. Journ.," Aug. 1, 1897; ⁵"Journ. of Laryng.," Sept. 1897; ⁶"Arch. f. Laryng.," Heft 13, Band. iv; ⁷"Edin. Med. Journ.," May, 1897.

ALBUMINURIA. (See also "Bright's Disease.")*E. Hurry Fenwick, F.R.C.S.*

Renal-Puncture.—Reginald Harrison¹ in his Presidential Address at the Royal Medical Society of London, gave the results of his experience of three cases upon which he had operated, in which albuminuria of some standing completely, and apparently permanently, disappeared after the digital exploration and puncture of the kidney capsule was practised.

In all the cases the kidney was explored and punctured or incised, not with the intention of treating an albuminuria, but with the object of discovering some other co-existing morbid condition which, though previously suspected, was not on exploration found to exist. The good results accruing appeared at the time either unexplainable, or were referred to local states, such as the accidental fixation of a movable kidney, the division of a disordered nerve, or the moral effects of an operation.

CASE 1.—In 1878 the author cut down on the kidney from the loin in a youth of eighteen, expecting to find a suppuration either within or around the organ. The patient was suspected to have had scarlet fever three weeks before this was done, and had since suffered from intense lumbar pain. He had had a slight rash, some desquamation, a sore throat, and albuminous urine with casts. The operation was undertaken with some hesitation, and the incision was limited so as just to enable the finger to be placed upon the kidney. It felt so tense that the incision was extended in the expectation of finding matter. No pus, however, was found. There was a full discharge of blood and urine from the wound for some days. The latter was lightly plugged with lint, and healed soundly in the course of ten days. After the incision was made the excretion of urine became far more abundant, and the albumin gradually and completely disappeared.

CASE 2.—In 1887 a man aged fifty, a miner, presented symptoms of occasional hæmaturia in conjunction with colicky pains about the groins, and a diagnosis of renal calculus was made. When seen a few months later, the urine was largely and constantly albuminous, and there was some pain referred to the right loin. The right kidney was explored and found to be enlarged and tense. An incision an inch in length was made through the cortex and the pelvis explored with the finger, but no stone could be found. There was a considerable discharge of blood and urine, which continued for a fortnight or so, a drainage tube being retained in the wound; on the withdrawal of the latter healing followed, and the urine became quite normal. The

patient remained in excellent health and was able to resume his ordinary occupation.

CASE 3.—This case came under observation in 1893, and was that of a woman, aged forty-four, who had suffered from slight hæmaturia at times for a year previously ; occasionally the urine was albuminous. She had a severe attack of influenza, which was followed by an aggravation of her renal symptoms. She complained of pain on pressure over the left kidney, and the albumin not only increased in quantity, but was constantly present in the urine. She believed she had passed a small calculus some months previously. On exploration the left kidney was found to be swollen and very tense. It was opened and explored with the finger, but no calculus could be discovered. There was a free drain of urine, with some blood, which continued for about a fortnight, when the wound closed. The patient is now quite well and the urine normal.

The author believes the first case was scarlatinal nephritis ; the second, nephritis from exposure to cold and damp ; and the last, sub-acute nephritis following upon influenza. Each case was characterized by the presence of albumin in the urine, attributable to previous inflammation or its immediate effects.

The author also quotes two cases published by Newman, of Glasgow, where albuminuria ceased after the performance of nephrorrhaphy. In the one case torsion of the ureter had led to hydro-nephrosis, albuminuria and tube casts in the urine ; and in the other torsion of the renal vessels had produced albuminuria, tube casts, severe pain and suppression of urine.

From a careful consideration of these cases Reginald Harrison thinks it is impossible to avoid arriving at the conclusion that the disappearance of albumin from the urine was directly connected with the surgical treatment to which, in each instance, one of the kidneys was submitted. That the organs were in a state of tension, in one class of cases, as the result of inflammatory hyperæmia, whilst in the other from mechanical vascular obstruction. That the relief of renal tension by direct surgical interference has been proved to be practical, and is under certain circumstances indicated, is supported by the cases cited.

Assuming that the means suggested for dealing with intra-renal tension, under certain circumstances, are applicable, it may be urged that as the kidney, as normally disposed, is a double organ, both glands must be directly submitted to the proceedings proposed, inasmuch as in the ordinary form of nephritis both kidneys are usually similarly involved. This, however, does not necessarily follow, as the

sympathies existing between the two organs are such as to cause impressions, exercised upon one, to be reflected on the other. Relief afforded to one kidney, as the cases cited illustrate, usually assists the other; whilst when the excretory power on one side is suspended or arrested, the opposite organ speedily takes up the whole of this work.

Cases in which Reni-Puncture may do good.—The grounds upon which it may be desirable to give relief by surgical means directly applied to the kidney, may be illustrated by some of those cases of nephritis which are seen as consequent on scarlet fever, though it seems to the author, that this application is not necessarily limited to these. In the larger proportion of cases of scarlatinal nephritis the kidney complication is only of a temporary character, and the disappearance of albumin from the urine is both gradual and complete. Under such circumstances surgical interference could not be regarded as warrantable. On the other hand there are a considerable number of cases met with where this is not so.

These may be ranged into two groups. The first includes those cases where the kidney complication is from the onset of the gravest nature, and death is imminent with more or less suppression of urine. In these cases a fatal issue usually ensues most rapidly, the duration of life being largely determined by the degree of suppression that is arrived at.

The second group of cases includes those where, after a limited time, the tendency, so far as the renal symptoms are principally concerned, is not in the direction of recovery. The amount of albumin does not decrease; tube casts as well as other evidences of disorganization are found in the urine, and the latter in quantity is below that which may be regarded as an average.

Though a physical examination of these organs, either from the loin or by abdominal manipulation, may fail to give any indication as to their condition, tenderness on pressure is often complained of. It is from amongst the cases in these two groups that instances will be found where the measures advocated may sometimes be advantageously practised. It is in these instances that death either rapidly occurs, or is brought about, no less surely, in the course of time by the more chronic forms of nephritis in conjunction with the cardiac complications which so frequently arise in connection with them.

The kidney should be exposed by a moderate incision from the loin, so as to enable the operator to feel the organ distinctly, both in front and behind. If in conjunction with albumin in the urine the kidney is found in a state of tension, three or four punctures may be made through the capsule in various directions; or should the organ be

found in a higher state of tension, then a limited incision into the cortex may be practised. Free drainage by gauze or drainage tube should in all cases be adopted.

Criticism.—The collator is convinced that Mr. Harrison has not differentiated between the two broad varieties of albuminuric kidneys, the one bilateral constitutional (somatic), the other localized, often unilateral at first and frequently the result of latent ascending ureteral changes. Reni-puncture is suited for the latter.

REFERENCE.—"Brit. Med. Journ.," Oct., 1896.

Prof. R. Saundby, M.D., F.R.C.P.

Boureau¹ says the reagent known by the name of **Tanret**, acetic solution of iodide of potassium and bichloride of mercury, is not trustworthy, because it precipitates at the same time the peptones and alkaloids. Thus the urine of an individual taking sulphate of quinine would show an abundant precipitate, causing a belief in the presence of albumin. In the same way, one taking antipyrin would have a reaction take place in testing with the Esbach solution. The author, therefore, believes these two tests should cease to be employed. He gives the following as a sure test for serin and globulin, the two pathological albumins: Mix equal parts of urine and **Sulphate of Sodium** and add a few drops of **Acetic Acid**. If heat produces a precipitate, serin or globulin is surely present.

Dr. Zeehusek² has examined the urine of one hundred and forty-four supposedly healthy individuals. His examinations were made from the standpoint of the clinician, and only that substance was regarded as albumin that was coagulable through heat. He concludes as follows: (1,) Many cases of albuminuria in young people (5 per cent. in the one hundred and forty-four) are caused by affections of the renal parenchyma; (2,) In another series of cases the albuminuria in the young is of extra-renal origin, *i.e.*, accidental (red blood corpuscles, leucocytes, spermatozoa, etc.); (3,) Functional albuminuria was not observed in the one hundred and forty-four cases examined; (4,) In the persons examined no trace of a "physiological albuminuria" was discovered. (In 71.5 per cent. of the one hundred and forty-four cases the most delicate re-agents failed to disclose the faintest trace of albumin.)

REFERENCES.—"Gaz. méd. du Centre," No. 1; "Med. Rec.," May 8, 1897; "Med. Times and Hosp. Gaz.," Dec. 19, 1896

ALOPECIA AREATA, CALVITIES, SEBORRHŒA OLEOSA.

T. Colcott Fox, M.B.

Sabouraud, the accomplished chef du Laboratoire of the Faculty at the Hôpital St. Louis, at Paris, fresh from his brilliant researches on

the plurality of ringworm fungi, set himself to unravel the mysteries of alopecia areata. This inquiry directed his attention to seborrhœa, and this in turn to calvities. After a laborious investigation, extending now more than three years and not yet completed, he arrives at the conclusion that a special form of greasy or oily seborrhœa of the scalp leads infallibly to calvities, and also determines the local and temporary form of baldness which we know as alopecia areata. A special micro-bacillus is at the bottom of all this mischief.

Sabouraud uses the term *seborrhœa* in a definite sense to signify a morbid state characterized by a flux of the liquid secreted by the sebaceous glands of the skin. The oily seborrhœa which leads to alopecia is a cutaneous affection, always benign, more frequent and more marked in adolescence. In its simplest forms it is localized to the face, to the nose, to the fufrow between the cheek and nose. It has more extended forms where all the hairy regions are involved, and lastly, forms, nearly generalized, where all the skin is oily. This oily seborrhœa has two symptoms recognizable by the naked eye, viz., a superproduction of normal sebum giving an oily aspect to the integument, and a dilatation of the sebaceous orifices giving the skin a coarse appearance. Further, the superior third of the duct is dilated with flattened and atrophied walls, and contains a little cylinder or plug, or cocoon of corneous lamellæ and sebum, which can be expressed by pressure. This oily seborrhœa is not itself desquamative, and it must be clearly distinguished from the so-called *dry seborrhœa*, better denominated *pityriasis capitis*.

A consecutive phenomenon to oily seborrhœa in all regions, but of especial importance on the scalp, is a diffuse depilation, paroxystic as the sebaceous outflow itself, which becomes at length definitive (*seborrhœic calvities*). Under certain circumstances *pelade* (*alopecia areata*) directly arises. Pelade and calvities are therefore essentially identical. The patch of pelade is due to an attack of acute circinate seborrhœa, and inversely the bald become so by a diffuse process of chronic pelade. Why the same parasite creates two maladies clinically distinct is yet to seek. But with oily seborrhœa for a basis a number of secondary infections can arise, viz., the desquamative epidermitis of the scalp called *pityriasis capitis*, and the affection known as polymorphous acne of the face, in which the cocoons become comparatively enormous and are then known as comedones. This acne is due to secondary infections of the comedones, which we must regard as only a monstrous and degenerated seborrhœic cocoon.

Now this oily seborrhœa has a constant microbial expression.

The expressed contents of the follicles contain a special, very delicate, micro-bacillus in remarkable abundance and purity. The localization of these bacillary colonies in the skin is extremely special and everywhere identical, viz., encysted in masses in the cocoons. The micro-bacillus enters by the mouth of the follicle and locates itself between the hair and the follicular wall in the part of the follicle above the opening of the sebaceous gland. The irritation of the adjacent epithelium occasions the formation of successive layers of corneous cells, which encyst the parasitic colony. Thus a minute cocoon is formed which pushes the hair to one side. Simple pressure extrudes these plugs.

Now when a seborrhœic cocoon develops in the orifice of a follicle it is found that certain reactionary phenomena result, viz., sebaceous hypersecretion, infiltration of mast cells and leucocytes around the follicle, gradual hypertrophy of the related glands, progressive atrophy of the papillæ of the hair, and finally the death of the hair. Microscopical examination shows that this hair is normal in its oldest part, atrophied (absence of medullary cells, diminution of pigment) in its youngest part.

The micro-bacillus never invades the hair papilla. The hair lesions are not due to the presence of a parasite in its structure, as in ring-worm. By what mechanism then is the depilation produced? Sabouraud conjectured that it is by a microbial poison acting upon the hair papilla. He then set to work to cultivate the bacillus and obtain pure cultivations. The disparity of human and animal skins and the essential difference of their bacterial flora are great obstacles to a direct microbial transplantation, and there are other great difficulties. Results from this point of view are not, and cannot be convincing. As a matter of fact he has not succeeded in making this special micro-bacillus of oily seborrhœa grow in animals.

Sabouraud, however, thought that the cultures ought to contain the hypothetical poison. Was it possible that when injected subcutaneously or intramuscularly the poison would pick out the hair follicles and depilate the animal? Yet this, he claims, has come about under certain conditions in the sheep, rabbit, and guinea pig.

In *seborrhœic calvities* the depilation is chronic, incomplete, diffuse, with chief incidence on the vertex. It is then a perfectly characterized, specific, microbial malady. The connection between oily seborrhœa of the vertex and baldness has been long known empirically, but Sabouraud claims to have *proved* it, and to have demolished the French idea that calvities was one of the few unmistakable evidences of the arthritic diathesis. Once constituted it

presents varying aspects, *e.g.*, (1,) Some of recent date, especially in the young, show typical seborrhœa (acne) oleosa with plugged follicles ; (2,) In older cases the mouths of the follicles are large, but not longer plugged in the cleanly ; (3,) In old men the scalp is polished from peripilar sclerosis, but sections display the plugs and the enormous hypertrophy of the sebaceous glands.

Pelade (alopecia areata) is a localized and usually temporary calvities. Sabouraud makes exceptions, it should be said, for bald patches produced by traumatism and general infections like syphilis. Every peladic patch, before depilation commences—and whilst it lasts, is the seat of an intense seborrhœic infection, pure and superficial. Acute pelade is an acute local seborrhœa. Stereotyped pelade is a chronic generalized seborrhœa. In pelade the depilation is acute, complete, affecting any site. Clinical and histological examination proves that (1,) In the centre of a spreading patch of alopecia cocoons are absent or old, or in course of expulsion as an unformed mass of cells and pigment (a sort of last effort of the exhausted papilla) ; (2,) In a zone beyond this there exists a compact colony of micro-bacilli occupying the follicles already deprived of hair ; further out colonies completely surrounding hairs undergoing atrophy. Upon the active border of the patch the entrance of the organism between the hair and the follicular wall may be traced ; further out still, beyond the patch, the hairs are healthy and sterile. Cultures confirm the identity of the micro-bacilli found in these cocoons and in oily seborrhœa. The acuteness of the process explains the marked absence of seborrhœa. The special action of the bacilli in pelade must be explained by a greater virulence present at infection or acquired. Fresh patches are due to plugs expelled from old patches. In certain patches the microbial infection may become chronic, so that each follicle contains millions of bacilli filling the anfractuositities of the atrophied and distorted follicles. In chronic cases the atrophied follicles join in clumps and contain microscopic recurved downy aborted hairs, whilst the sebaceous glands become colossal and the epidermis depigmented.

Sabouraud insists on the significance of the constant repetitions of the same facts in the same order. Moreover, his histological and clinical observations appear well founded. It is the interpretation of these observations and the sufficiency of the further experimental evidence that is questioned. The objections taken are chiefly on clinical grounds, that the Pasteurian proof is wanting and the experimental proofs by inoculation are unconvincing.

TREATMENT.—A local irritation of a formed patch, already freed from microbes, which hastens diapedesis, cellular repurgation, and

the expulsion of microbial products, is the only resource to stimulate the growth of hair. This explains why **Acetic Acid**, **Cantharides**, etc., are so useful. Invading and chronic pelades, in which the microbes are still present, must be treated like seborrhœa for the purpose of checking it, and preventing the infection of new patches and relapses. Now against oily seborrhœa three or four agents have a therapeutic value, viz., **Sulphur**, **Oil of Cade**, **Ichthyol**, **Resorcin**, to be used in fatty penetrating media, and the best of these is sulphur.

REFERENCES.—Sabouraud, sur la nature, la cause et le mécanisme de la calvitie vulgaire ("Ann. de derm et de syph.," T. viii., No. 3, March, 1897); also La séborrhée grasse et la pelade ("Ann. de l'Institut. Pasteur.," Feb., 1897); also Sur les origines de la pelade ("Ann. de derm. et de syph.," 1896); Discussion sur la séborrhée et les alopecies ("Ann. de derm. et de syph.," June, 1897); Note concernant les alopecies et les séborrhée ("Ann. de derm. et de syph.," May, 1897).

AMENORRHŒA.

Synopsis.—(Vol. 1897, pp. 57 and 106)—**Extract of Ovary**. Gymnastic Exercises, Hydrotherapy, Sea Bathing, Saline Spring Baths: as tonic, $\mathcal{R}$ Mercury Bichlor., Sod. Arseniat., Strych. Sulph., āā gr. 1; Pot. Carb., Ferr. Sulph., āā gr. 30. M. Ft. pil. 60. *Sig.*—One after each meal; or if stomach is feeble, $\mathcal{R}$ Ferr. Arseniat., gr. 2; Ext. Nux Vom., gr. 15; Mangan. Sulph., gr. 75. M. Ft. pil. 60. *Sig.*—One after each meal. If constipation is troublesome, $\mathcal{R}$ Ferr. Carb., Ammonizæ, Aloe (Socot.) āā gr. 75; Syrup, q.s. M. Ft. pil. 60. *Sig.*—One after each meal. In obese patients an active purge increased as period approaches, *e.g.*, $\mathcal{R}$ Aloes, gr. 15; Rue, gr. 7; Savin, gr. 7. M. Ft. in cachet No. 10. *Sig.*—One after each meal; or the Oils of Savin and Rue may be used.

AMPUTATIONS (of Leg).

Priestley Leech, M.D., F.R.C.S.

Bier of Kiel¹ has performed eleven amputations of the leg by the following method, with the best results. The stumps can bear pressure and the same method can be applied successfully to painful stumps. The technique is as follows:—

(1.) A large skin flap is formed either from the anterior and inner side, or from the anterior and outer side of the leg. The incision for this flap begins a thumb's breadth internal to the inner edge of the tibia and ends at a point opposite at the other side of the leg, or the incision begins about three fingers' breadth external to the anterior edge of the tibia and ends at a corresponding point on the opposite side of the leg. With either incision the scar is in the calf and nowhere becomes adherent to the bone.

(2.) The flap is dissected up and turned back (*Fig. 4*) and the bones are sawn through at the apex of the flap (α in *Fig. 3*), the bones thus projecting the length of the flap (*Fig. 4*¹).

(3.) Upon the inner surface of the tibia a quadrangular flap consisting of fascia and periosteum is marked out, and in connection with the periosteum a thin flap of bone is also taken from the tibia, this bone flap being large enough to cover the sawn surface of the tibia and fibula. The periosteum is so cut that it is larger in every direction than the bone flap (*Fig. 5*); more especially at its upper extremity where the periosteum forms a stalk or hinge (*a* in *Fig. 5*) so as to



Fig. 3.



Fig. 4.



Fig. 5.



Fig. 6.



Fig. 7.

allow the flap to be turned down upon the surfaces of the sawn tibia and fibula. The rest of the tibia and fibula (from *d* to *c* and *b* to *a* *Fig. 4*) are removed. The periosteal bone-flap is turned over (*Fig. 6*) and sewn to the periosteum of the tibia and fibula which has previously been retracted at *d* and *b* (*Fig. 4*). The skin flap is then turned down and sewn (*Fig. 7*).

Bier says the same principle can be applied to other amputations, *e.g.*, those at the heel when the os calcis is diseased, using a periosteal bone-flap from the tarsus and a skin-flap from the heel if the skin is healthy.

REFERENCE.—¹ "Centralblatt. f. Chirurgie," No. 31, Aug. 1897.

ANÆMIA.

Synopsis.—(Vol. 1897, pp. 6, 39, and 112.) **Medullary Glyceride, Citrate of Iron and Manganese** in 20% solution administered hypodermically. Dose—half the amount per os. **Protonuclein, Ferratin.**

ANÆSTHESIA.

Priestley Leech, M.D., F.R.C.S.

Local.—Dr. Tito Costa¹ draws attention to the advantages of using **Cocaine** injections with water at a temperature of 122° to 131° F. Weak solutions (0·5 to 0·4 per cent.) possess a marked anæsthetic power; local anæsthesia appears immediately after injection; with an equal quantity of solution injected a greater zone of anæsthetized tissue is obtained; since a smaller quantity of drug is used the toxic effects are markedly diminished.

G. W. Spencer² gives further evidence with regard to **Eucaïne** as an anæsthetic; he says it is rapid in its action, safe, produces positive and prolonged anæsthesia, there are no serious after effects, and it can be rendered aseptic by boiling. The greatest difference between cocaine and eucaïne is that eucaïne can be administered in large doses without danger. He details its use in twenty-four cases.

Hobday³ says eucaïne has been used in some forty cases in the Veterinary College. The results have been as follows: The toxic dose is somewhat larger than that of cocaine, and with regard to the eye the results are as good though its action is not so rapid, but when injected subcutaneously they are not so good as those of cocaine. Hobday and his colleagues have found that a mixture of eucaïne and cocaine dissolved in water possesses the better anæsthetic properties of cocaine, and can be tolerated in larger doses than cocaine alone. The limit of safety in the dog and cat is $\frac{1}{5}$ of a grain to each pound of body weight. The toxic symptoms are not so rapidly noticeable as in cocaine poisoning.

General.—Dr. Cottam⁴ recommends **Sparteine Sulphate** as a cardiac stimulant in chloroform narcosis. He enumerates the following conclusions:—

(1,) That sparteine sulphate administered hypodermically before the beginning of anæsthesia, in the dose of $\frac{1}{10}$ of a grain, repeated according to the nature of the operation and the condition of the patient, is a safe, efficient and prompt heart stimulant in chloroform narcosis.

(2,) It is not necessary to combine it with morphia nor to use it in larger doses than those specified.

(3,) Other things being equal, there is less shock and there is prompter reaction with its use.

REFERENCES.—¹"Vratch," p. 737, 1896, quoted in "Amer. Journ.

of Med. Sci.," Feb. 1897; ²"Med. and Surg. Reporter," Nov. 28, 1896; ³"Journ. Comp. Path. and Therap.," March 29, 1897, quoted in "Brit. Med. Journ.," June 5, 1897; ⁴"Ind. Lancet," March 15, 1897, and "Therap. Gaz.," Nov. 1896.

ANASARCA (General).

Synopsis.—(Vol. 1897, p. 65.) *Sambucus Niger* Decoction as diuretic.

ANEURYSM.

Henry Handford, M.D.

Dr. Hershey¹ relates the following remarkable case: The patient had suffered from deep-seated pains in the chest for one-and-a-half years. In January, 1895, a slight bulging of the chest was noticed, gradually increasing till the following May, when a decided pulsating tumour was found, most prominent between the second and third ribs, about two-and-a-half inches to the right of the median line. Aneurysm of the innominate artery was diagnosed, and on August 29, 1895, the following treatment was carried out. A large-sized hypodermic needle, with a calibre of about No. 22 gauge, was insulated by applying layer after layer of the varnish of gum shellac, each layer set in its turn by heat. The needle was thrust into the sac and blood spurted through it to a considerable height. This was immediately controlled by introducing two-and-a-half feet of gold wire, No. 28 gauge, through the needle into the sac. The wire was cut about three inches from the needle, and attached to the positive pole of a galvanic battery. The negative pole, having for its electrode a flat wet sponge, six inches by eight, was kept in contact with the skin of the back, directly opposite the aneurysm. The current was gradually increased up to 70 milliampères, as registered by the galvanometer. For three-quarters of an hour no change took place in the movements of the needle or the strength of the current. After this the movements gradually became less and the current diminished from 70 to 40 milliampères at the end of one hour and twenty-five minutes. Instead of the full pulsating mass characteristic of an aneurysm, a much smaller, hard, resisting tumour was felt. The man returned to work in October, and remained well nine-and-a-half months after the operation.

REFERENCE.—¹"Therap. Gaz.," Sept. 15, 1896.

ANGINA PECTORIS.

Henry Handford, M.D.

Dr. Osler¹ teaches that **Diet** is in many cases the central point in treatment. Limit the amount taken, which in most persons above forty years of age is far too great. The quality of the food is to be regulated with reference to one all-important feature—viz., flatulence. A few doses of blue pill, an occasional saline purge, and the use at times of a good bitter tonic keep this condition in check; also

the use of hot water *before* breakfast. In elderly men accustomed to stimulants, hot grog at bedtime allays the tendency to flatulence, which is sometimes the cause of wakefulness.

Genuine angina in a man under thirty-five should arouse a suspicion of syphilis, and vigorous measures should be adopted.

In a large proportion of all cases of angina pectoris the treatment consists in the administration of **Iodide of Potassium** in doses of gr. x or gr. xv three times a day, and *continued for two to four years*. It is specially suitable for robust middle aged men, in whom the angina is the sole symptom.

In the worry and strain of modern life arterial degeneration is not only very common, but develops often at a relatively early age. For this I believe that the high pressure at which men live, and the habit of working the machine to its maximum capacity, are responsible, rather than excesses in eating and drinking, or than any special prevalence of syphilis. Angeio-sclerosis, creeping on slowly but surely, "with no pace perceived," is the nemesis through which Nature exacts retributive justice for the transgression of her laws—coming to one as an apoplexy, to another as an early Bright's disease, to a third as an aneurysm, and to a fourth as angina pectoris, too often slitting "the thin spun life" in the fifth decade, at the very time when success seems assured.

For the paroxysm Dr. Osler recommends, besides the nitrites and the inhalation of chloroform, the hypodermic injection of **Morphine**, and refers to "the remarkable tolerance of morphine in certain cases."

The following prescription² for angina pectoris is a useful one on account of the ready way in which nitro-glycerine solutions are precipitated from watery, or weak alcoholic solutions and the consequent uncertainty of the dose :—

℞ Nitro-glycerine	3 grains	Alcohol and Peppermint	
Tincture of Capsicum	40 drops	Water	aa ʒiij

Sig.—5 to 10 drops may be given for an attack.

Dr. Bradbury³ relates a case of angina pectoris treated most successfully by **Erythrol Tetranitrate**, the advantages of which remedy consist chiefly in the long interval of relief afforded by it when contrasted with nitrite of amyl or nitro-glycerine. It is not so speedy in its action as the inhalation of nitrite of amyl or the inhalation of chloroform. The dose is 1 grain, and it can be given either in tablet form or in solution in 1 drachm of alcohol and 7 of water, or in pill. If given in solution it begins to act within two or three minutes, but the alcohol is apt to irritate the stomach. The tablet is the best form of administration. When swallowed it begins to act in about twenty minutes, when masticated in about ten minutes.

In the case described nitro-glycerine in doses of $\frac{1}{80}$ grain only kept off an attack for two to three hours, and in doses of $\frac{1}{25}$ grain for three to four hours. Erythrol tetranitrate, grain 1, kept off an attack for nine to twelve hours.

Dr. Bostwick⁴ recommends the hypodermic use of **Hyoscine** in angina pectoris. The case he narrates was that of a woman, aged twenty-nine, suffering from chronic endocarditis, resulting in extensive valvular lesions and accompanied by angina pectoris. The attacks were very severe and were unrelieved by inhalation of nitrite of amyl (6 minims), morphine (gr. $\frac{3}{4}$) or nitro-glycerine (gr. $\frac{1}{80}$) hypodermically. Nothing, in fact, short of narcosis relieved the distress. Eventually $\frac{1}{16}$ gr. of hyoscine hydrobromate was given hypodermically. The effect was magical. In fifteen minutes she was relieved, and in half-an-hour was sleeping quietly. The dose, though large, was not followed by any poisonous symptoms. The pulse was accelerated to 90, the respirations were 20 per minute; and the pupils were moderately dilated. The temperature was not raised, and there was no dryness of the throat. The patient complained of slight dizziness, and there was a perceptible flushing of the face.

REFERENCES.—“New York Med. Journ.,” Dec. 19, 1896; “Rev. Internat. de méd. et de Chir.,” Sept. 10, 1896; “Brit. Med. Journ.,” April 10, 1897; “Med. Rec.,” May 8, 1897.

Græme M. Hammond, M.D., New York.

Rumpf¹ has recently written an exhaustive article on angina pectoris resulting from arterial calcification. It seems to the author highly irrational to condemn those patients to a diet rich in lime, such as milk, when the trouble depends upon an excess of lime in the body. Lime should be excluded as much as possible, and those medicines should be given which have a direct effect upon the excretion of lime in the urine and fæces.

The **Diet**, as elaborated by the author, is as follows: Meat, 9 ozs.; bread, fish, potatoes and apples, each about 4 ozs. The apples may be replaced by fresh beans, green peas or cucumbers. Cheese, eggs, beets, rice, cabbage, and spinach, which are rich in lime, are to be proscribed absolutely. As a drink the author recommends distilled carbonic water, or simply water that has been boiled and cooled. As a remedy the following formula is given:—

	Sodium Carbonate	ʒijss	
	Lactic Acid, enough to saturate		
Then add—			
Lactic Acid	ʒijss	Aquæ Destil.	ʒvj
Syrup	ʒijss		
Sig.—To be taken during the day.			

Experiments showed that this increased the daily elimination of lime through the urine and fæces over 50 per cent. As the quantity of lime eliminated exceeds the amount ingested with the food, the organism must necessarily part with some of its calcium salts.

REFERENCE.—¹ "Amer. Med. Surg. Bull.," Nov. 10, 1897.

ANKYLOSTOMIASIS.

James Cantlie, F.R.C.S.

Otto Galgey,¹ Colonial Assistant Surgeon, St. Lucia, West Indies, gives a very practical account of the treatment of this disease. It would seem that in the island of St. Lucia tropical anæmia, or rather pernicious anæmia, was for many years a scourge. The coolies on the plantations, as well as the natives of the island, succumbed to anæmia in hundreds. By post-mortem examination Dr. Galgey proved the ankylostoma duodenale to be present in numbers, and, profiting by the knowledge, treated the patients in hospital with **Thymol** in 10 to 20-grain doses. The result of the treatment was most satisfactory, as practically every case so treated recovered.

Examination of the excreta for this intestinal parasite requires care and experience. "The excreta must be submitted to at least six washings, and the deposit allowed to settle between each washing."

The earth-eating habit, the *safura* of Livingstone, also termed *pica* or *geophagia*, is a common accompaniment of this disease—worm anæmia, and, in fact, it may be the source of infection. Eating food with hands improperly washed, after working in the plantations, is considered the primary means of contracting the disease.

The writer (J. Cantlie) examined the stools of twelve patients suffering from well-marked beri-beri in Hongkong, in 1893. The examination was continued daily for one month. Thymol was exhibited as well as other parasitocides, but on no single occasion was an ankylostoma duodenale found, nor were the ova discovered in the stools. This is not to be ascribed to ignorance of the appearance of either the worm or the ova, for the observer had before him specimens of both, supplied by Dr. Walker, of Borneo, who in a hundred consecutive post-mortem examinations found the worm or ova in every case of beri-beri he examined in Borneo.

Luis and Jacoby² give a series of observations on twenty-three native African negroes. The following parasites were found: *Ankylostoma duodenale* in twenty-one cases; *trichocephalus dispar* in eight; *ascaris* in eight; *anguillula stercoralis* in four; *tænia* in four; and *amœba* in two.

The negroes showed no signs of anæmia, so that the negro may have the parasite without the infection, that is, ankylostomum but not ankylostomiasis.

REFERENCES.—¹ "Brit. Med. Journ.," Jan. 23, 1897; ² *Ibid*

ANTHRAX (or Malignant Pustule).*T. Colcott Fox, M.B.*

Le Roy des Barres¹ has met with seventy-two cases of anthrax in a factory at St. Denis, where skins are tanned and wool prepared. Anthrax has been nearly stamped out in the French flocks by the practice of Pasteurian inoculation. The skins and fleeces coming from Turkey, Russia, Bulgaria, and the Argentine are infectious. The writer points out the difficulty of sterilizing skins and fleeces without injuring them. Formol vapour is not sufficiently penetrating. In the seventy-two cases there was a death-rate of 14 per cent. The site of the inoculation, where possible, was attacked with the **Thermo-Cautery**, and injections containing 10 per cent. of **Iodine**, or in extreme cases pure iodine; internally, oxygenated water and iodized water were administered.

Delore² refers to writers who have pointed out the benign evolution of certain cases of malignant pustule. Bourgeois was of opinion that two-thirds of the cases terminated favourably. Fever is said to be of no value in prognosis, *i.e.*, cases may be fatal without fever, and apparently grave cases may recover. The presence of bacilli in the blood is of greater value, but it is not absolute.

As the result of experiments in the Guy's Hospital Bacteriological Laboratory, **De-emetised Ipecacuanha** is now prescribed in the wards, internally and externally.

In some remarks with reference to cases reported by Jackson,³ of Barnstaple, and Black, of Brighton, it is laid down that **Excision** is still the most certain method of removing the *materies morbi*, and should be adopted whenever the position of the pustule permits. Should, however, excision be impossible from any cause, the careful and thorough application of suitable antiseptics such as pure carbolic or strong tincture of iodine locally after incision offers the best chance of effecting a cure.

REFERENCES.—¹"French Acad. of méd.," 1897; ²"Soc. méd. Sci., Lyons," May 19, 1897; ³"Lancet," May 15, 1897.

ANTISEPTICS.*Priestley Leech, M.D., F.R.C.S.*

Disinfection of the Hands.—Leedham-Green¹ has performed a series of experiments to determine the relative value of the various methods used for rendering the surgeon's hands sterile. Every precaution was taken and control experiments were made, and in every case the brushes, etc., proved to be sterile. There were two classes of experiments, *viz.*, those made upon the hands when in a normal state, and those upon the hands when artificially infected. The results of his experiments are as follows:—

(1.) Simple washing with soap and hot water, together with the use

of nail brush and nail cleaner. Twenty-five experiments were made, the time spent in washing varying from five to fifteen minutes. In only two cases did the hands prove to be sterile; in all the other cases the tubes were strongly infected.

(2,) Soap and water and sand. The results were no better.

(3,) Soap and water and turpentine. In six cases infection was present in all.

(4,) Experiments with alcohol : (a,) Upon the normal hands. The hands were first washed in several waters to remove the gross dirt, then scrubbed with sterile hot soap and water, and in the middle of the process a sterile ivory nail cleaner was used. The hands were rinsed in sterile water to remove the soap, and then treated with alcohol. In addition to a nail brush with the spirit a piece of sterilized loofah or lint was used. After this the hands were freely rinsed in hot sterile water and then tested as before. In twelve experiments the hands twice proved absolutely sterile and once almost so. It is worthy of notice that in two of these cases the operator had not been actively engaged in his profession for some days previously; (b,) After artificial infection. For the purposes of artificial infection either pure cultures of bacillus pyocyaneus or a variety of the potato bacillus were used. The hands were also tested after making a *post mortem* examination, opening an abscess or dressing a septic case. The results were after infection with bacillus pyocyaneus eleven experiments, one case sterile; after infection with potato bacillus six experiments, all infected. A second scrub with hot water and soap between the use of alcohol and the test gave no better results.

(5,) Experiments with ether. These were made with ether or a mixture of alcohol, and ether in place of alcohol. The results were similar to those made with pure alcohol.

(6,) Experiments with antiseptics. Caution must be exercised in accepting the results of experiments with antiseptics when tested with the culture tube, for a very small quantity of antiseptic will prevent the growth of micro-organisms without killing them. Less than a 100,000th part of perchloride of mercury is sufficient to prevent the growth of the anthrax bacillus in gelatine. Perchloride was used in most cases, and the hands after being cleansed with soap and hot water, and then with spirit, were brushed with a hot sterile solution of perchloride. As much as possible of the latter was removed by freely rinsing in hot water, and to neutralize what was still clinging to the hands, they were dipped in a freshly sterilized solution of ammonium sulphide, rinsed again in sterile water and then tested. With hands in a normal condition, eleven experiments, two absolutely sterile, four

almost so, and five infected. In twelve experiments with the hands infected with bacillus pyocyaneus, three times were the hands sterile, two almost so, and seven times strongly infected. In eight cases of infection with the potato bacillus there was dense growth of the organism in every case except one. Thinking that the test of scraping under each finger nail with a finely serrated piece of ivory was too severe, he modified the experiment by simply rubbing the slip briskly over the skin of the hands, avoiding the nails altogether. The results were the same, for after infection with the potato bacillus, in not a single instance were the hands rendered sterile.

The results of his experiments were so strikingly dissimilar from those of Reinicke, Ahlfeld and others, that the possibility of the accidental infection of his tubes was certain to suggest itself. Such infection was extremely unlikely for the following reasons : (1,) The whole of the control experiments remained sterile ; (2,) The bacillus pyocyaneus and potato bacillus were used alternately in making the experiments, and the organism with which the hand had been infected invariably developed so largely in excess that it was difficult to recognize any other ; (3,) When the ivory slip with which the skin had been scraped was gently dropped into the culture tube and the agar-agar immediately solidified by cooling, the microbes could be seen to grow from that end of the slip which had scraped the skin, and from that end alone ; (4,) The number of colonies diminished with the length of time spent in cleansing the hands. He thinks the best results are to be gained by an extension of Fürbringer's process, and that the use of alcohol is a valuable agent, although it will not accomplish all or nearly all that Reinicke and others claim for it.

The Use of Gloves for Operating.—The difficulty or rather impossibility of rendering the hands perfectly aseptic, which has been demonstrated by bacteriological experiments, has led several surgeons to make use of gloves in performing aseptic operations.

V. Zeuge-Manteuffel² makes use of india-rubber gloves. He says they prevent the surgeon's hands becoming the seat of furunculosis, and he uses them under the following conditions : (1,) In septic operations ; (2,) In clean operations which cannot be postponed, and where through any circumstances the surgeon has been obliged to come into contact with septic matter ; (3,) Where an operation cannot be postponed and the surgeon's hand has a wound or furuncle on it ; (4,) In cases of sudden accident. The gloves are disinfected by boiling.

Mikulicz³ has operated in all aseptic cases in gloves for three months, and the results have been exceedingly good, and he thinks

that by this means the chief defect in the present day system of wound treatment has been removed. He uses fine cotton thread gloves of the cheapest sort, and they are sterilized by steam like the dressings. If the operation is a short one only one pair of gloves are needed, if it be longer two or three pairs are used. If during the course of the operation a septic focus is opened, the gloves are changed for a clean pair. His assistants and those who hand the instruments are also provided with gloves. The hands of the operator are, of course, disinfected as usual. In cases where the operation is in an infected part, e.g., the rectum, mouth, etc., gloves are not used.

Perthes,⁴ of Leipzig, has used long silk gloves reaching to the elbow in the same way.

Prophylaxis of Sepsis.—Mr. Watson Cheyne⁵ says that in the cases of septic disease where injections of antistreptococcic serum have been used and the patient has recovered, the proof that the recovery has been due to the injections is, to his mind, not quite satisfactory. The experimental evidence is, however, very strongly in favour of the view that the serum ought to exercise a prophylactic action. He thinks its main use will be as a prophylactic in cases where infection by the streptococcus is likely to occur, more especially in operations about the tongue, throat and rectum. Septic pneumonia is the great bugbear in operations about the pharynx, the tonsil and base of the tongue, and in most, if not all, cases it is due to the streptococcus pyogenes, and if the serum really acts as a prophylactic, much of the danger of these operations will be removed. Soon after this idea occurred to him he had to operate on such a case, in which carcinoma involved the base of the tongue, the anterior pillar of the fauces, and the tonsil, and with large glands on the anterior triangle of the neck. Two days before operating he injected 20 c.cm., and 10 c.cm. of the serum the day before operation. The progress of the case was very remarkable; there was no elevation of temperature after the first twenty-four hours; no inflammation about the wound; no tendency to any septic infection or septic pneumonia; and no sloughing of the surface of the wound. There was no superficial sloughing and no odour from the breath. On the day after the operation a third dose of 10 c.cm. of the serum was injected. The patient recovered, and the only noticeable thing was a serum rash and a slight rise of temperature on the fifth day. The second case was one of malignant disease of the left side of the lower jaw, spreading on to the inside of the cheek and anterior pillar of the fauces. This case also was remarkable for its freedom from septic trouble; there was no odour from the breath. A third case did well until the fifth day, when death took place from

cerebral embolism from a clot in the lingual artery, extending into the carotid.

Boucheron⁶ has used the serum in operating on a cataract in a diabetic patient, a lymphangitis of the leg being present at the time; the patient did well. Mr. Carless⁷ used it as a preventive of suppuration.

REFERENCES.—¹"Brit. Med. Journ.," Oct. 17, 1896; ²"Centralblatt. für Chirurgie," No. 20, 1897; ³Ibid., No. 26, 1897; ⁴Ibid.; ⁵"Practitioner," April, 1897; ⁶"Annales d'oculistique," Aug. 1896; ⁷"Med. Press and Circ.," May 12, 1897.

ANTRUM (Disease of).

R. Lake, F.R.C.S.

Barclay Baron^r thus sums up the symptoms of maxillary sinusitis. Nasal discharge: this is unilateral, generally canary coloured and opaque; the flow is intermittent, it is fœtid, but this is chiefly noticed by the patient. Pain: variable in situation and amount; may be antral, running up the outer angle of the orbit, or over temple or ear. He also thinks that if a patient has nasal polypi and nasal discharge, before any attempts have been made for the removal of the former, one should see the effect of this, previous to diagnosing sinusitis.

The best solutions for irrigations are undoubtedly those which cause the least irritation, and foremost amongst these we place sterile **Saline Solution**, $\frac{1}{8}$ per cent., and weak solutions of **Formic Aldehyde**.

Luc² describes a new (*sic*) method which is very similar to that some years in use, in which a counter opening is made into the floor of the inferior meatus through a provisional opening in the canine fossa.

Krebs³ shows that exploratory puncture is not the harmless procedure assumed by its advocates. He points out that pus has been found after the *fourth* puncture for instance, and he also maintains that a collection of serum or serous fluid calls for no treatment.

Laubi⁴ points out that recurrent sycosis of the vestibulum nasi may arise from this cause, and considers the inferior meatal opening the simpler in acute or sub-acute cases, and the alveolar opening will cure the majority of chronic ones.

Maxillary Transillumination.—Escat⁵ has invented a very ingenious hooded electric lamp which he passes into the retromaxillary fossa between the cheek and jaw.

REFERENCES.—¹"Bristol Med. Chi. Journ.," May, 1897; ²"Journ. of Laryng.," Sept. 1897; ³"Arch. für. Laryng.," Band 4, Heft 5; ⁴"Corresp. Blatt f. schweizer Aerzte.," June 15, 1897; ⁵"Journ. of Laryng.," Sept. 1897.

ANUS (Fissure of).*Herbert W. Allingham, F.R.C.S. Eng.*

For painful defæcation due to fissure the following ointment¹ has been prescribed :—

R Extract of Conium	5j	Lanolin	5j
Castor Oil	5ss		

M. Jules Chéron² has employed **Cocaine** and **Ichthyol**. After obtaining local anæsthesia by means of a tampon of absorbent cotton saturated with a 1 per cent. solution of cocaine hydrochloride, he touches the fissure with pure ichthyol, and repeats this process for several days. At the fourth or fifth application the cocaine tampon is introduced as far as the internal sphincter, the anus is slightly dilated with Nélaton's dilator, and the fissure can then be thoroughly touched with ichthyol. For recent fissures ten applications, and for old fissures rarely more than twenty applications are necessary. Various enemata and other remedies are referred to by M. Floersheim³ in his review of the treatment of this painful malady.

REFERENCES.—¹"Journ. des Prat.," May 9, 1896; ²"Gaz. de Gyn.," Feb. 1, 1897; ³"Journ. des Prat.," Nov. 14, 1896.

ANUS (Fistula of).*Herbert W. Allingham, F.R.C.S. Eng.*

Dr. William Bodenhamer¹ has published a learned article dealing mainly with the formation, structure and pathology of fistulous passages or sinuses, and also mentioning cases of spontaneous cure. The uninitiated may derive some aid from his distinctions between a fistula and its sinuses; and his studies of the adventitious tissue or apparent mucous membrane which lines the internal surface of fistulæ are of interest to the pathologist.

Dr. W. Ely's² new operation for fistula, the chief feature of which consists in dissecting out all of the indurated tissues surrounding the previous sinuses and then suturing the wound so as to ensure its complete closure, is merely the revival of the old method which was discussed by Mr. Pitts,³ and the uncertainty of which has already been animadverted upon by the present contributor.⁴

Dr. Kammerer's⁵ article on "Unilateral and Complete Exclusion of the Intestine for Fæcal Fistula" seems to fall into the province of abdominal, rather than of rectal, surgery.

REFERENCES.—¹"New York Med. Journ.," Dec. 5, 1896; ²"Amer. Med. and Surg. Bull.," Feb. 25, 1897; ³"Lancet," May 5, 1896; ⁴"The Diagnosis and Treatment of Diseases of the Rectum," by William Allingham and Herbert W. Allingham (6th edition); ⁵"Med. Rec.," Feb. 20, 1897.

APHONIA (Hysterical).*R. Lake, F.R.C.S.*

Massei¹ tested the relative sensibility of the various parts of the larynx in the normal, and compared the results with those obtained from a case of a variety of this disorder, in which the sensibility is diminished, the order of acuteness in the normal being: (1,) Inter-arytenoid region especially over the cartilages of Santorini; (2,) The local cords; (3,) The epiglottis. In the case examined there was diminished sensibility of the inter-arytenoid region, the vestibule and subglottic parts. So much was the sensation diminished that food constantly obtained entrance into the larynx.

TREATMENT.—Auslaud² has employed **Bromide of Ethyl** with success in five cases of hysterical aphonia. The patients were rapidly anæsthetized with 10-grain doses, and as soon as partially anæsthetized, suggestion was made that they should count loudly, repeat their names, etc. The results were most satisfactory.

REFERENCES.—¹ "Bull. delle Mal. dell Orecchid, etc.," June, 1896; ² "Gazz. degli Osped.," Jan. 10, 1897.

APPENDICITIS.*Priestley Leech, M.D., F.R.C.S.*

Several papers on this subject have appeared during the last twelve months. The hotly debated question of surgical *versus* medical treatment has not yet been settled, though signs are not wanting that the strife has become somewhat less heated.

Dr. George Shrady¹ remarks that what localized pain is to diagnosis so is the increased pulse rate to operation; he believes the pulse is, in some cases, the only guide to operative interference. The sudden increase of pain is an indication of serious mischief, especially if attended with shock. The actual number of pulse beats is not of so much account as their tendency to increase, though Willie Meyer's rule to operate when they reach from 116 to 120 is a good rule. Besides these, the associated condition of prostration of the patient should be taken into account. Except in the fulminating cases there is always opportunity for noting the course of the disease, and there is usually no necessity for hurry in arriving at conclusions.

McCosh and Hawkes² report sixty-nine cases of appendicitis; they compare the prevalence of symptoms in these cases and say the great question is—When to operate? They lay stress on the following points as indicating operation: The general appearance of the patient (some bad cases, however, look surprisingly well); the pulse—a pulse of 120, after the first twenty-four hours calls for removal (on the other hand, in severe cases the pulse may remain under 100); vomiting, if continuous, is a symptom of the greatest import; tympanites is another grave symptom; rigidity of the abdominal muscles is often of the

greatest value in determining the severity of the attack ; in chronic or recurrent cases it is generally wise to operate on those patients who have had two distinct attacks. The cases were all hospital cases ; of the sixty-nine, sixty were operated on ; nine were not. Of the nine not operated on, two were cases of general septic peritonitis which were moribund on admission.

Of the sixty cases operated on fifty-one were suffering from appendicitis without general septic peritonitis ; nine from appendicitis and general septic peritonitis which had developed before admission to hospital. Of the fifty-one cases, one died—a mortality of 2 per cent. Of the nine cases with general septic peritonitis operated on, six died and three recovered—an operative mortality of 66 $\frac{2}{3}$ per cent. The treatment is that advocated by McCosh. (See "Peritonitis.")

Southam³ reports several cases of recurring appendicitis in an illustrated article. He thinks that in these cases operation is indicated after two well marked attacks of appendicitis, especially if the physical signs—more particularly a swelling in the situation of the appendix—persist in the quiescent period after the subsidence of the attacks.

Talamon⁴ says statistics show that the axiom that every case of appendicitis should be operated on cannot be accepted, and that the indications and chances for interference must depend on the clinical aspect of each individual case. The differential diagnosis is difficult in the early stages. The frequency of the small weak pulse is perhaps of most value ; if permanently above 120 in an adult, or 130 to 140 in a child, the diffuse form is suggested. He thinks it better to defer operating in cases of intense peritoneal inflammation ; if the attack be already diffuse no harm is done by delay ; if not, and generalization is simulated by the intensity of the inflammation and consequent nervous reaction, the operation may be avoided altogether ; or in two or three days when limitation is established there will be less risk of changing a local mischief into general peritoneal suppuration, as has often been done, especially in children, by premature intervention. Once the diagnosis of local suppuration has been made the surgeon should be called in. The danger of perforation is but little in chronic relapsing appendicitis ; it is greater in recrudescence than in recurrence, and always greatest in a first attack. At commencement of attack purgatives should be interdicted, but when under ice, leeches or morphine, the acute pains of the first few days have subsided, aperients are not merely harmless, but necessary. Use **Leeches, Ice**, or hypodermic injections of **Morphine** to relieve pain, but do not give opium internally. Surgical measures are only required in one-third of the cases. Experience has shown that immediate intervention gives

no better results than if delayed for a few days. (Few would, however, be found to agree with this last statement.)

Caley⁵ says the unequivocal indications for operation are : (1,) The definite existence or strong suspicion of diffuse peritoneal infection, including all cases of so-called "acute perforative appendicitis"; (2,) Local suppuration; (3,) Relapsing peri-typhlitis or appendicitis, and operation is perhaps the safest treatment in (4,) Cases of "recurrent appendicitis"; (5,) Acute cases of appendix disease, especially in young subjects, seen within the first twenty-four or thirty-six hours, in which with severe initial symptoms, the condition as a whole suggests a severe lesion. Four cases are also reported by Page.⁶

Byron Robinson⁷ says when patients with chronic appendicitis suffer considerably on brisk walking or rough riding without considerable rise of temperature or pulse, the trouble generally lies in the fact that the damaged appendix lies within the range of action of the psoas muscle, irritating the diseased appendix into violent peristalsis.

Stimson⁸ advocates McBurney's incision in suppurating as well as in simple cases of appendicitis. Elliot⁹ cuts through the external oblique and then separates the fibres of the internal oblique and transversalis.

W. H. Battle¹⁰ recommends the following operation for appendicitis as one preventing a hernial protrusion : An oblique incision is made in the right iliac region in the direction of the right linea semilunaris, its centre corresponding to the point which the surgeon thinks is the attachment of the appendix. After division of the skin and subcutaneous tissue the incision is carried through the aponeurosis of the external oblique and the outer part of the sheath of the right rectus muscle; this part of the incision is placed about an inch from the external margin of the sheath. The rectus muscle is then drawn towards the middle line after having been separated from the inner surface of the sheath with the finger. When the edges of the wound are retracted the deep epigastric artery will be seen lying on the posterior layer of the sheath. The artery is easily avoided and the posterior layer of the sheath, sub-peritoneal tissue and peritoneum divided to the full extent of the wound. Retractors will bring the area of operation well into view. After the appendix is removed the wound is closed by three layers of sutures. The posterior part of the sheath and the structures behind the muscle are brought together with one line of sutures, the rectus is then allowed to return to its natural position. The anterior part of the sheath and the external oblique aponeurosis are then sutured and afterwards the skin and subcutaneous tissues. By this method of operating the uninjured rectus muscle is interposed between carefully united

layers which do not accurately correspond with one another, and the risk of hernial protrusion is done away with. During suturing the tendinous expansion of the external oblique aponeurosis is apt to become displaced during manipulations of the wound, and so escape suturing.

Fowler¹¹ describes a new method of getting rid of the appendix. He had tried Edebohl's method of entire inversion of the appendix and Dawbarn's of inversion of the stump after amputation of its distal two-thirds, but both methods had proved unsatisfactory in certain cases. His method is as follows : (1,) A ligature is passed through the meso-appendix and tied tightly about the base of the mesentery, the latter being then cut across and the appendix freed ; (2,) The appendix is drawn forwards so that the cæcal wall surrounding its base bulges forwards. A purse-string suture is passed in the cæcal wall a quarter to three-eighths of an inch from the extreme circumference of the bulging portion of the cæcal wall in order to insure that no portion of the appendix shall escape the subsequent excision. The free ends of this suture are given to an assistant ; (3,) A temporary ligature is now

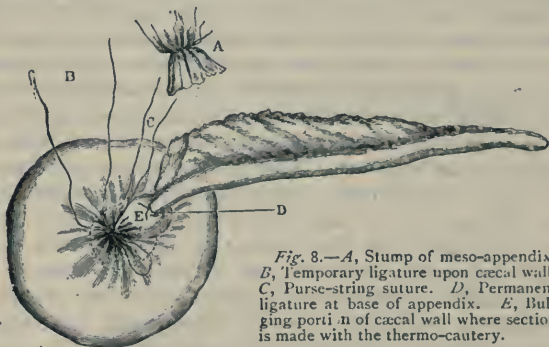


Fig. 8.—*A*, Stump of meso-appendix
B, Temporary ligature upon cæcal wall.
C, Purse-string suture. *D*, Permanent
ligature at base of appendix. *E*, Bul-
ging portion of cæcal wall where section
is made with the thermo-cautery.

thrown about the base of the bulging portion and either twisted or tied in a "soft knot." If twisted, the ligature is prevented from untwisting by being grasped with forceps ; (4,) A permanent ligature is made to encircle the appendix about half-an-inch away from the temporary ligature just described ; (5,) The appendix is amputated between the ligatures and close to the cæcal wall by means of the thermo-cautery, and the stump, which is really a portion of the bulging cæcal wall, touched with the cautery to arrest any possible hæmorrhage, and also sterilize the stump ; (6,) The purse-string suture is tightened, thus drawing in close apposition the serous surfaces about the cut edges of the cæcal wall and effectually closing the opening which represents

the site from which the appendix has been excised. The provisional ligature is removed by pulling upon one of its ends, the "soft knot" untying, or it is untwisted (*Fig. 8*).

Barker¹² in a paper on the "Variety as to time and extent in the production of inflammatory collections due to appendicitis," describes several instructive cases, and he says the widest difference exists in the rate at which inflammation extends from a focus of infection in the appendix or cæcum and in the area which may be involved in each. There are the widest differences in the types of inflammation which may be set up by the initial lesion. The time necessary for the production of a serious inflammatory collection varies from a few hours to many days. From some diseased appendices a rapid widespreading serous effusion of the most septic form is set up, while from others only a little local abscess is produced. Again, in some cases where gangrene of the appendix is well marked, a purely local collection of matter is produced, while a simple non-gangrenous perforation may lead to universal peritonitis. The cases described illustrate these various points.

REFERENCES.—¹"Med. Rec.," Jan. 9, 1897; ²"Amer. Journ. Med. Sci.," May, 1897; ³"Brit. Med. Journ.," April 17, 1897; ⁴"Méd. mod.," Nos. 29 and 31, 1897, quoted in *Epit. "Brit. Med. Journ.,"* May 1 and 8, 1897; ⁵"St. Mary's Hosp. Gaz.," March, 1897; ⁶"Clin. Journ.," April 27, 1897; ⁷"Annals of Surg.," Dec., 1896; ⁸*Ibid.*, March, 1897; ⁹"Amer. Journ. Med. Sci.," April, 1897; ¹⁰"Brit. Med. Journ.," April 17, 1897; ¹¹"Amer. Journ. Med. Sci.," Feb., 1897; ¹²"Practitioner," Feb., 1897.

ARTHRITIS (Tuberculous).

Priestley Leech, M.D., F.R.C.S.

Bier's Treatment of.—Boutique¹ records the results of this treatment in seven cases observed in Aubeau's clinique at the Hôpital International, Paris.

The circulation in the affected limb was almost completely arrested every day or every other day by the application over a layer of cotton-wool of an Esmarch bandage above the affected joint for a period of five or six minutes at first, afterwards increased, but never exceeding twenty minutes. In the intervals the limb is kept wrapped in cotton-wool in a gutta percha splint, but every day or every other day was placed for twenty or thirty minutes in a bath of boiled water kept at a temperature of 50° to 55° C. (120° to 131° F.)

For mere pruritus an ointment of **Mercury** and **Belladonna** and suitable constitutional treatment was adopted. **Massage** was cautiously applied later, the *sine qua non* being that it should not give pain. Two cases were completely cured; the others greatly improved.

REFERENCES.—¹"Thèse de Paris," 1896 to 1897, quoted in *Epit. "Brit. Med. Journ.,"* May 1, 1897.

ASTHMA.*F. de Havilland Hall, M.D., F.R.C.P.*

Dr. W. Brügelmann,¹ after reviewing the causes which may give rise to the symptom asthma, recommends the removal of local irritations. To lessen the sensibility of the respiratory mucous membrane, sprays of 1 per cent. **Tannic Solution** or of **Potassium Chlorate** in atomizer may be useful. In bronchial asthma inhalations of **Ammonium Chloride Solution** or strong **Carbolic Mixture** from a Wulff-bottle are recommended. In asthma of cardiac origin the inhalation of **Compressed Air**, with the use of **Digitalis** and **Strophanthus**, is indicated. If interstitial nephritis is a causative factor, **Milk-Diet**, **Baths**, **Diuretics**, and **Diaphoresis** are in order. The *éducation asthmatique* means the use of suggestion and auto-suggestion, tending toward better mental processes, until the stereotyped answer of the asthmatic, "I cannot," is no longer met with. To suggestion may be placed the cures following the use of secret remedies or the directions of irregular practitioners. The diet should be the usual mixed one. In seeking for a climate it is well to remember that for a time immunity from attacks may be apparent, but finally acclimatization takes place and the symptoms reappear.

The intimate connection which exists between digestive derangements and the occurrence of asthma has given rise to the term dyspeptic asthma. As to how dyspepsia causes asthma, there is a great difference of opinion. By some the theory of auto-intoxication is put forward to explain the attacks, but Boas² rejects this view on the ground of his own chemical examinations. But whatever may be the explanation of the connection, the fact remains that one of the most important questions to be considered in the treatment of asthma is that of the patient's diet.

The two drugs which still hold the first place in the treatment of asthma are **Iodide of Potassium** and **Arsenic**. They may be administered separately or combined. Dr. Arey³ recommends the following combination :—

℞ Potass. Iodidi	ʒvj	Liq. Arsenicalis	ʒiij
Tinct. Bellad.	ʒv	Aquæ ad	ʒviij

M. Sig.—One teaspoonful in water between meals.

Dr. William Murray⁴ says the following prescription has achieved the happiest results in spasmodic asthma :—

℞ Tinct. of Stramonium	ʒij	Powdered Rhubarb	gr. xx
Ammonium Carbonate	ʒj	Chloroform	ʒ xx
Sodium Bicarbonate	ʒiij	Peppermint Water, ad	ʒviij
Magnesium Carbonate	ʒj		

M. Sig.— $\frac{1}{2}$ -oz. to be taken three times a day with 1 oz. of water.

"Having thus secured a temporary lull in the complaint, the patient must be put on a course of arsenic, care being taken to give just as much as the stomach will bear. A good plan is to give **Fowler's Solution**—5 drops—with breakfast and dinner, and maintain the corrective dose with **Stramonium** at night."

The formula for the "Cigarettes Espic" so largely used in asthma is, according to Trousseau,⁵ the following :—

R̄ Fol. Elect. Herb. Bellad.	0·36	Fol. Elect. Phellandrii aquat.	0·06
Fol. Elect. Herb. Hyoscy.	0·18	Extract Opii	0·008
Fol. Elect. Herb. Stram.	0·18	Aq. Laurocerasi	q. s.

The leaves, well dried and freed of their ribs, are cut up and carefully mixed. The opium is dissolved in cherry-laurel water, and the mass is uniformly dampened with the solution. The paper which is used in making the cigarettes is also previously washed in a maceration of the leaves above named in cherry-laurel water and carefully dried. The patient smokes one or two of such cigarettes during an attack.

REFERENCES.—¹"Therap. Monats.," 1897, Heft 2, S. 74; ²"Berlin. klin. Woch.," 1896, No. 39; ³"Clin. Journ.," Dec. 4, 1896; ⁴"Rough Notes on Remedies," Lond., 1897; ⁵"Med. Rec.," Feb. 27, 1897.

ASTHMA (Nasal).

R. Lake, F.R.C.S.

Shech¹ says that bronchial spasm is the first, bronchitis the second, and over-distension of the lungs the final stage of asthma. Intra-nasal treatment more often alleviates than cures. Bronchial asthma occurs during rest if of nasal origin, and all asthmas may be one sided, as has since been proved by means of the fluoroscope.

Lepetit² reports a cure of nocturnal asthma following removal of nasal polypi. Nasal polypi are among the less frequent causes of this complaint.

REFERENCES.—¹"Munch. med. Woch.," August, 1896; ²"Gaz. des hôp. de Toulouse," Mai 1, 1897.

BERI-BERI.

James Cantlie, F.R.C.S.

Nothing that can be designated a scientific fact has been added to our knowledge of beri-beri during 1897. There has been much discussion concerning the outbreak in the Lunatic Asylum Infirmary in Dublin, but the appearance of the disease there still remains a mystery. That it is a 'place' disease is asserted by most observers; but, on the other hand, that it is a food disease is upheld by such authorities as Professor Kenneth McLeod, of Netley, and by the Dutch observers generally.

Rice is the diet to which the Dutch medical officers in Sumatra and Java ascribe the disease; but it is difficult to conceive that this theory

can hold good in Dublin where rice is a rare article of diet. The Dutch ascribe the disease to coarse or decorticated rice, but that is a form seldom or never met with outside plantations in the tropics. That the disease is infectious, whether by personal contact or by house infection, is certain, as several of the nurses in the Dublin Lunatic Asylum contracted the ailment.

The complete alliance of kala-azar with beri-beri is not admitted on all sides, although many astute observers maintain that the diseases are identical.

That the disease is caused by an intestinal worm—the anchylostoma duodenale—finds a few supporters, but the majority incline to the opposite opinion.

The cause of the disease, its affiliation with others and its treatment are still in a state of empiricism, which is unsatisfactory and which will demand years of careful research to elucidate. Malaria, scurvy, intestinal worms, food infection and insanitary surroundings generally are the main causes assigned at present, but it is possible that none of these are the actual cause of the disease, as careful investigations bearing upon every one mentioned seem to end in fatuity.

BLADDER (Female—Diseases of).

Theophilus Parvin, M.D., Philadelphia.

Obstinate Cystitis.—Escat¹ concludes a lengthy paper on this subject as follows: (1,) In cases of cystitis resisting ordinary treatment a careful examination should be made of the pelvic organs to determine if there is not some extra-vesical cause for the symptoms. The urethra and kidneys should also receive due attention; (2,) After exhausting the usual local methods of treatment (drainage, irrigation, curettage, etc.), epicystotomy should be performed if there are no renal complications. Through the incision the ureters can be catheterized directly, and any diseased portions of the mucosa can be reached with the curette or thermo-cautery; (3,) Vaginal cystotomy is preferable in cases of accompanying renal trouble, or when the patient's general condition is bad; (4,) A still more thorough plan of surgical treatment is to follow the epicystotomy and cauterization immediately with a vaginal cystotomy, thus securing perfect drainage.

Hyperæmia of Bladder.—Garceau² states that attention to general health is of paramount importance. Digestion corrected if deranged, bowels well moved in order to relieve pelvic congestion; local applications of **Nitrate of Silver**, and in some instances of **Glycerite of Tannin** and **Ichthyol**, have been plainly beneficial. Great relief follows using the fine coil of the **Faradic Current**; the bipolar vagi-

nal electrode may be used, or one electrode may be placed upon the abdomen over the bladder, and the other in the vagina. Correct any abnormal condition of the urine. Finally, if the patient still suffers, absolute rest in bed, and mild unstimulating diet will be indicated. This failing, the question of perfect drainage and rest for the bladder, by making an artificial vesico-vaginal fistula, is to be considered. The relief thus promptly obtained is in some cases very striking. The fistula must be made close to the sphincter, for if made high up near the cervix, the urine will make a pocket, and so the operation fail. In case of cystitis, the fistula must not be closed until pyuria has ceased.

Curetting the Bladder in Cystitis.—Camero³ reported twenty-nine cases of painful cystitis treated by Guyon's method: nineteen cures and ten failures. The method is this: Patient anæsthetized, bladder irrigated with **Boric Acid** and **Sublimate Solution** (1 in 10,000); a medium-sized Volkmann's curette is introduced, while the left index finger against the vesico-vaginal wall is used as a guide. The instrument is moved carefully over the mucous membrane in the region of the trigone and the neck, where the disease usually is. The lateral walls, the anterior wall, and finally the urethra are similarly curetted, irrigation being used from time to time. After this a self-retaining catheter is employed, its use being continued for fifteen to twenty days. The author states that no accident has followed this treatment.

Ureteritis.—Dr. Edward P. Reynolds⁴ states that the characteristic symptoms of chronic ureteritis are increased frequency in urinating, greater when standing, but not absent in lying-down, bearing-down pain, also increased by standing, and tenderness and desire to urinate if pressure is made over the curve of the ureter. Examination of the bladder shows alteration in the appearances of the ureteral orifices and adjacent mucous membrane. If ulceration, apply solid **Nitrate of Silver** to ureteral openings; give the patient large quantities of water, employ **Alkaline Diuretics** and a bland nutritious diet, largely albuminous, and use occasionally gentle **Massage** and light exercise. Acute ureteritis, often mistaken for intestinal or renal colic, or salpingitis, begins with severe abdominal pain, chiefly on one side, starting in the renal region, and extending gradually down to the bladder. When this occurs, vaginal examination will show tenderness and swelling of the vesical end of the ureter. Treatment is similar to that of the chronic form, but there is a great tendency to spontaneous recovery.

REFERENCES.—¹"Amer. Journ. Med. Sci.," May, 1897; ²"Boston Med. and Surg. Journ.," Sep. 16, 1896; ³"Gaz. heb. de méd. et de Chir.," ⁴"Amer. Gyn. and Obstet. Journ.," Sept., 1896.

BLADDER (Hernia of).*Priestley Leech, M.D., F.R.C.S.*

Gilson¹ reports four fresh cases of hernial protrusion of the bladder observed during operations on hernia. Two of the cases were inguinal (both in males), and two femoral (both in females). Clinically, these vesical herniæ may be divided into those in which a portion of the bladder is engaged in the hernial orifice, and those in which the bladder is drawn into the orifice during the course of an operation for radical cure of ordinary hernia.

The author says that when a hernial sac has been exposed and opened anything resembling another sac should be looked upon with the suspicion that it may be the bladder, and should be treated as such until its identity is established. Exploring with a sound, or distension with air or fluid, will sometimes apparently fail to establish the connection of a given structure with the bladder and lead the operator to open this viscus in spite of all precaution. All fatty material in the neighbourhood of a hernial sac, especially on its inner and posterior aspect, should be treated as if a portion of the bladder were hidden within it, and should never be cut away until the absence of anything but fat has been clearly demonstrated. If the bladder should accidentally be opened it should be closed with a double row of silk sutures not involving the mucous membrane. The superficial portions of the hernial wound should not be closed but be packed with gauze. He does not advocate temporary retention of a catheter, as in some cases bad results have followed.

REFERENCES.—¹ "New York Med. Rec.," March 20, 1897, quoted in *Epit. "Brit. Med. Journ.,"* June 5, 1897.

BLADDER (Surgery of). (See also "Calculus.")*E. Hurry Fenwick, F.R.C.S.*

Resection of the Bladder.—Kuester¹ reports two cases of resection of the bladder, both successful. The first case was that of a woman, aged forty-one years. There was a papillomatous tumour surrounding the opening of the right ureter, which grew rapidly. Suprapubic cystotomy was performed. The orifice of the right ureter was divided; the tumour resected, the ureter freed and stitched to the vesical mucous membrane, and the bladder and abdominal wounds closed. Recovery was satisfactory.

The second case was that of a tumour on the right side of the bladder. On opening this viscus the growth was found to be the size of a fist. The ureter opened in the upper portion of the tumour. The peritoneum was detached from the posterior bladder wall, the latter was resected together with over an inch of the ureter, and this canal was then sutured to the upper portion of the bladder. Recovery was good.

Extroversion of the Bladder.—Reginald Harrison² read a paper on a new operation for extroversion of the bladder, before the Medical Society of London. The patient was a boy of fifteen with a congenital exstrophy of the bladder, and an epispadiac penis with the pelvic cleft. There was considerable protuberance of the posterior wall of the bladder, upon which the orifices of the ureters were distinctly visible. The exposed mucous membrane was very sensitive, and readily bled upon being touched either by the hand or the clothes, and the thighs and legs were much excoriated by the constant dripping of urine from above.

The condition of each kidney was repeatedly tested by examination of the urine, obtained by catheter from either ureter.

On January 17, 1896, the left kidney was removed by lumbar incision. The patient recovered rapidly and completely from this preliminary operation. With the view of allowing ample time for the remaining kidney to grow and provide for the entire urinary excretion, the patient went home for some months.

He was admitted to Hospital, and on December 5, 1896, the working capacity of the remaining kidney being known to be satisfactory, the following operation was performed: A flexible bougie was passed up the solitary ureter to serve as a guide for finding the canal as it crossed the brim of the pelvis. An incision was made in the right loin as if for lumbar colotomy. The ureter was readily found and exposed. After ligation with silk at the point where it crosses the common iliac artery, and division on the proximal side of the ligature, the ureter was brought up into the loin wound and its cut end attached there by one fine silk suture.

On January 7, the patient was allowed to get up on a couch, and since that date has steadily improved in every respect.

The patient was to be fitted with an apparatus for collecting the urine as it escaped from the loin. Shortly after the patient was shown at the Medical Society, the orifice of the right ureteral sinus in the loin commenced to close gradually. Distension of the pelvis ensued and despite active dilatation of the orifice, pyelonephritis resulted, and the patient died of uræmia. The procedure is of very questionable value.

REFERENCES.—¹“Deut. med. Woch.,” No. 18, 1896; ²“Med. Press and Circ.,” April 28, 1897.

BLEPHARITIS.

Synopsis.—(Vol. 1897, p. 141.) Ointment of Sulphur and Resorcin, each 2% for squamous form. Adherent scales are removed by gentle friction with chloral hydrate solution (1 in 10). In ulcerative form remove crusts, then cauterize with Silver Nitrate and use Mercurial Salves. Pyrogallie Acid in 5 to 8% ointment.

BLOOD CYSTS. (See "Abdominal Surgery.")

BOILS.

Synopsis.—(Vol. 1897, p. 141.) Purify with 1 in 1000 Perchloride Solution and cover with Phenol and Mercurial Plaster, changing daily.

BONE (Diseases of).

Priestley Leech, M.D., F.R.C.S.

Chronic Osteitis of Tibia.—Mr Davies-Colley¹ thinks that in chronic osteitis, where it is doubtful whether there is an abscess or sequestrum in the bone or there is simple inflammation, the best plan is to drill the bone by means of a bradawl or Archimedean drill without making a preliminary incision through the skin. If pus escape at any point, or a cavity is found, it is easy to make an incision and to open up the abscess or sequestrum cavity with a gouge or trephine. Should no such cavity exist the case is probably one of osteosclerosis, and much benefit is usually obtained from the relief of tension and possibly also from the admission of healthy granulation tissue into the interior of the bone through the drill holes. Notes of a case successfully so treated are given.

Bone Cavities.—Isch-Wall and Regnier² state that **Salol**, which melts at 40° C., may be liquified and poured into bony cavities where it moulds itself accurately to the cavity and becomes almost vitreous in consistence. Liquid salol also dissolves iodoform, and the mixture forms an excellent mastic for plugging bony cavities. This method gives excellent results if the cleaning of the bone has been thorough.

Neuber³ considers **Iodoform** the best substance to use for the treatment of cavities left in bone after sequestrotomy and similar operations. He employs an emulsion, made as follows: Wheat starch, 10 grammes, is mixed with a little cold water, and 200 grammes of a boiling hot 2 per cent. carbolic acid solution and 10 grammes of iodoform are stirred in. On cooling it makes an even yellow jelly-like mass which melts at the temperature of the room, but remains unaltered for weeks. It should be kept in the dark, as iodoform changes with the light. Out of twenty-two cases all but three healed by first intention.

Ollier⁴ says that cavities in bone except those in young subjects are not readily filled up, and are not obliterated by the growth of granulations of medullary origin from the osseous walls. This is particularly the case in tuberculosis of bone. In order to hasten healing he suggests the removal or mobilization of one of the osseous walls, so as to allow the periosteum to come in contact with the opposite wall or to bring the osseous walls themselves into contact. The resistance of the bone is diminished, but new bone is soon deposited and increases the firmness of the bone. The removal of one of the osseous walls is

indicated in cases where the bone is hypertrophied ; if there is no hypertrophy it is better not to remove any of the bone but to make a bony flap or valve which can be moved so as to be applied to the opposite wall ; if necessary it can be fixed by a screw or peg. Multiple osseous flaps may be made, or the surgeon may make use of flaps taken from the same or an adjacent bone and displaced by gliding or partial twisting of the periosteal pedicle.

REFERENCES.—¹ "Lancet," May 29, 1897 ; ² "Therap. Gaz.," Jan. 15, 1897 ; ³ "Aerzt. Runds.," Oct. 1896 ; ⁴ "Rev. de chirurg.," April, 1897.

BREAST.

Synopsis.—(Vol. 1897, p. 155.) Painting with Cocaine, 5% solution, to check milk secretion.

BREAST (Malignant Disease of). *Priestley Leech, M.D., F.R.C.S.*

Dr. Herbert Snow¹ gives some notes on twenty years' work in the surgery of the mamma. He quotes several cases of protracted latency—one of eleven and two of seven years. In one case he excised both breasts simultaneously, but, he says, he will not repeat this either simultaneously or consecutively, for the appearance of carcinoma in the second breast is always synchronous with general blood infection with widely spread metastases in the marrow and viscera.

His conclusions are as follows : Infection of the bone marrow is the great obstacle to radical cure by operation in mammary carcinoma. This takes place in ordinary cases within six months of inception, frequently earlier ; its symptoms do not appear until within the second year ; they may not be accompanied by nodular deposit or other palpable evidence of cancer for five or six years more ; in atrophic cases it may be delayed for several years. Hence the three years' limit of immunity is wholly inadequate. The most important practical point in excision of the female breast is a wide dissection of the subcutaneous connective tissue around the diseased organ, from sternum to axilla, from the subclavian fossa to the cartilage of the seventh rib. No advantage, whatever, is gained by the destruction of an extensive skin tract. In every single instance he has met with, the utmost benefit that surgery could confer was perfectly compatible with the union of the greater part of the wound by first intention.

In cases of scirrhus, or even of encephaloid (acute) carcinoma, of but two to three months' duration, no pains should be spared to eradicate the disease permanently by dissecting out the entire mamma—a wide area of subcutaneous tissue around and the contents of the axilla—and at least an hour and a half should be devoted to that purpose. On the other hand, in advanced cases of long standing, it is futile to

risk life by prolonged and heroic measures when we know there is a deep-seated nidus which cannot be reached. The utmost advantage we can attain is removal of the gross lesions without risk, prompt union of the wound, and then by after treatment with opium and cocaine to procure a state in which the disease remains stationary for years or advances with almost imperceptible slowness. Partial amputation of the mamma for carcinoma is wholly inadmissible, unless for purposes merely of palliation; for the smaller scirrhus kernel extirpation should be thorough.

Evacuation of the axillary contents is very justly the rule, yet to this routine practice three exceptions should be noticed: (*a*.) Intracystic cancer growths; (*b*.) Fairly recent atrophic cases; and (*c*.) Scirrhus appearing close to the sternum, whence the axilla is much more slowly infected than from other regions of the organ, the lymph current flowing primarily to the thymus and mediastinal lymph glands.

REFERENCE.—¹ "Brit. Med. Journ.," Oct. 17, 1896.

BRIGHT'S DISEASE.

Prof. R. Saundby, M.D., F.R.C.P.

May renal hæmorrhage occur in healthy kidneys? This interesting question was decided in the affirmative by a remarkable concurrence of testimony in a debate which took place in the Berlin Society of Physicians. Severe exercise and muscular strain, such as prolonged riding or walking, appeared to be the most definite factors in its production. Ewald had observed a case of hysterical renal hæmaturia! There can be no question that most practitioners occasionally see transient hæmaturia which they are unable to ascribe to any organic lesion, and it is satisfactory to know that such eminent authorities as Profs. Senator, von Leyden and Renvers believe that "spontaneous" renal hæmorrhage may occur.

Treatment of Uræmia.—The state known as uræmia, namely, headache, vomiting, twitching, and convulsions associated with diminished renal activity, occurs under two very different sets of conditions; indeed, so different are they that it is useless to discuss the treatment of uræmia without defining them and dealing with them separately. In one of these the renal deficiency is recent and acute, as we see it in the acute nephritis of children. Here the symptoms are due to the poisonous effect of urinary excreta (? urea), which have rapidly accumulated in the blood, and the best results follow an evacuant plan of treatment. The renal trouble, usually transient in its course, tends to recovery, and the case affords the most favourable opportunities for therapeutic efforts, purging, sweating, and even bleeding being successfully employed. In the other, the renal defect is

the result of some long standing disease which has in course of time irreparably destroyed the greater part of the kidney structures, so that these organs have gradually become incapable of performing their functions. The whole of the tissues of the body have contemporaneously suffered from impaired nutrition owing to the non-elimination of waste products, and, above all, the nervous system has been subjected to a process of chronic poisoning which, at length, reaches a point at which the so-called uræmic symptoms begin to appear. Under such circumstances only slight and temporary benefit can be derived from evacuant treatment; and if this is employed too heroically more harm than good may ensue. In these desperate circumstances it is not worth while to do more than attempt to relieve symptoms and prolong life by simple **Milk Diet**, with the use of **Laxatives** and the **Hot-air Bath**. But where the renal condition affords a prospect of recovery, and simpler means fail, it may be well to remember the suggestion of Richardière to bleed to 300 grammes and then inject into the cellular tissue Hayem's artificial **Serum** or normal **Salt Solution**. Grundin recommends in suppression of urine, following delivery and abdominal operations, irrigation of the rectum with hot salt water.¹

Proben² protests against the use of pilocarpine in the treatment of uræmia, for it has proved itself, not alone in his hands but in those of others, an untrustworthy and dangerous drug. Not in the least does he wish to disparage its use in some ailments where it has proved itself extremely useful and a valuable addition to our materia medica; but in conditions where it jeopardizes the life of the patient, he emphatically protests against its further use. He doubts not that similar experiences could be recorded by others, were it not for the reluctance of offering our failures for just criticism. The loose statements of our text-books that this remedy may be employed with safety impress the reader that the drug may be resorted to with impunity. In Bright's disease, especially that form in which the circulatory appendages are involved, occurring generally in the senile state, we must, he thinks, admit that cardiac degeneration incapable of detection takes place, and if, for any reason, the use of pilocarpine may seem indicated, the drug should certainly not be prescribed. When he was interne at Charity Hospital, the general routine treatment for uræmia was hot-air baths and pilocarpine injections, and he recollects cardiac failure and pulmonary oedema were frequent causes of death, coming on shortly after its administration.

M. F. Dumarest³ has employed intramuscular injections of **Saline Solutions** in albuminuria and uræmia. He cites a number of cases to prove the efficacy of the treatment, and states that in two of them

he was struck with the rapid improvement in the general condition and the consecutive disappearance of the œdema and the albuminuria. After the injections, two orders of symptoms were observed : The first, and in some degree provisional, was the improvement in the pulse, in the energy of the heart, in the mental condition, and in the disappearance of the so-called toxic symptoms, which revealed an antitoxic influence probably connected with the dilution of the poisons. The later symptoms, polyuria, diarrhœa, and sweating, were more efficacious and more lasting, and exercised an eliminating action. Phlebotomy, says the author, may act as a substitute for antitoxic medication, but it is only a palliative, while injections of salt water possess a curative value owing to their eliminating action.

M. Dumarest sums up his experience in the following conclusions : (1,) These injections are not contraindicated by renal alterations. On the contrary, they exert the best influence on the toxic symptoms due to these alterations, and even on simple albuminuria ; (2,) Pulmonary œdema and anasarca do not constitute an obstacle to this method ; combined with phlebotomy, it is an heroic measure which should be resorted to all the more if the complications are more numerous and the situation is more serious ; (3,) Salt water probably acts by a double mechanism : Tonic and antitoxic in the beginning, which is palliative, and secondarily, eliminating, which is curative ; (4,) These injections are pre-eminently the proper means of treatment in desperate cases. In the last stages of uræmia and eclampsia they are a most powerful agent in the struggle with death.

Treatment of Bright's Disease.—Netchaieff⁴ has employed **Methylene Blue** in both acute and chronic Bright's disease. A man, aged fifty years, suffered from intercostal neuralgia and the cardiac difficulties consequent upon renal disease. He had a *bruit de galop*, visual disorders, painful polyuria, albuminuria, and hyaline casts in his urine. Under these circumstances he was given $1\frac{1}{2}$ grains of methylene blue each day, beginning on the seventh day of March. On the 31st of March, the patient, having taken some of the drug but failing to carry out instructions as to diet or manner of life, presented himself again, with ascites and œdema of the feet ; he was not, however, so easily fatigued ; the heart sounds were better, and there was not the *bruit de galop* ; the albumin had markedly diminished in the urine, as had also the hyaline casts. After a short period, in which the treatment was continued and rest insisted upon, there was still greater improvement, so that by the second day of July every trace of albumin was lost, the hyaline casts had entirely disappeared, and also the polyuria and painful micturition.

Mlle. A. Myszyńska,⁵ who relates ten personal and many other observations, says that, especially in the early stages, **Tincture of Cantharides** in doses of 10 to 12 drops is very beneficial in acute infectious nephritis, with or without anasarca, occurring in young people. It is contra-indicated in the interstitial nephritis of arteriosclerosis and in lead poisoning, and causes a rise in temperature in some cases of latent tuberculosis, but otherwise is harmless.

M. Pettidi,⁶ of Smyrna, gives an account of an attack of scarlatina which he contracted while attending a patient with that disease. The disease manifested itself in the most irregular manner; there was no eruption, but there was an erythematous angina with a pultaceous exudation. The temperature never exceeded 102.1° F., and from the first day there was a rather intense nephritis accompanied by lumbar pains, oliguria, and some uræmic symptoms; there was also a slight œdema of the legs, especially pronounced in the ankles. The urine was very dark and contained from 45 to 60 grains of albumin to the quart. A microscopical examination revealed a quantity of mucin, blood globules, leucocytes, epithelial cells, and casts. As treatment, absolute milk diet and diuretic and alkaline drinks were prescribed, while revulsion was practised in the lumbar region by means of wet and dry cupping. Three weeks afterward the urine became abundant, the albumin diminished, and, aside from some lumbar pain, the general condition was greatly ameliorated. At this time, without any appreciable cause, the disease broke out again, and oliguria set in with the same characteristics in the urine as had been seen in the first attack. M. Pettidi then resorted to the treatment recommended by M. Julia, as follows: Every morning, after an application of dry cupping, the dorso-lumbar region was rubbed with an ointment composed of 3 ounces of **Vaseline** and 1½ grains of **Pilocarpine**. The region was afterward covered with a rather thick layer of cotton. Six days after this treatment was begun the urine became very abundant and clear, and exceeded the normal quantity; the density was from 1.013 to 1.017, and a microscopical examination revealed but few leucocytes. This treatment was continued for twenty-five days, and at the present time the urine no longer contains albumin, and diuresis is normal.

Brouowski⁷ has experimented with **Strontium Lactate** on dogs, and concludes that it is a pure diuretic, and is more valuable than any other remedy in the treatment of acute inflammatory conditions of the kidney.

J. E. Ferran⁸ recommends an exclusive **Fish Diet**, selecting the fish that contain the most iodine, with once in a while a small amount

of some vegetable. The improvement is prompt and radical. He mentions one case that had been treated in vain at Paris for two years, which had yielded in a few days to this treatment. He had seen the patient recently in magnificent health, after seven years, with no restrictions as to diet necessary. This treatment is based on Ferran's chemico-clinical studies, and is invariably to be preceded by careful analysis of the urine, as he states that it must be limited to those cases that are in a generally satisfactory condition, without too large a proportion of granular cylinders, and in whom the urea, the density, the phosphates and phosphoric acid are normal or above, with over 800 grammes of urine eliminated in the twenty-four hours.

REFERENCES.—¹ Richardière, "L'Union méd.," No. 49, 1896; Grundin, "Amer. Med. Surg. Bull.," Sept. 26, 1896; ²"Therap. Gaz.," Nov. 16, 1896; ³"Thèse de Paris," No. 24, 1896 and 1897; "Brit. Med. Journ.," May, 1897; ⁴"New York Med. Journ.," April 17, 1897; ⁵"Therap. Gaz.," Nov. 16, 1896; ⁶"New York Med. Journ.," Oct. 17, 1896; ⁷"Wien. med. Presse," Sept. 13, 1896; ⁸"Journ. Amer. Med. Assoc.," Feb. 20, 1897.

BROMIDROSIS.

T. Colcott Fox, M.B.

William Osler¹ reports two rare and intractable cases of *general* bromidrosis, which in the aggravated form is, he says, a truly terrible affection. The first case got well under a persistent strong **Alkaline Treatment**. The second case was a very aggravated one, and treatment was ineffective. The woman probably committed suicide.

REFERENCE.—¹"Montreal Med. Journ.," May, 1897.

BRONCHITIS.

F. de Havilland Hall, M.D., F.R.C.P.

In cases accompanied by soreness and constriction across the chest, Tussy¹ recommends a 50 per cent. **Emulsion of Linseed Oil** with oil of winter-green or cinnamon to disguise the taste. The bronchial secretion becomes quickly established, and symptoms rapidly disappear. For an adult, $\frac{1}{2}$ oz. every four hours is an appropriate dose. Lewinthal² has found the following formula efficacious:—

R̄ Ammon. Carb.		Syrupi Aurantii	
Sodii Salicylatis	āā 3j	Syr. Tolutani	āā 3j
Elixir Paregoric		Aquæ	3ij

A teaspoonful every three hours.

According to Dr. Saenger,³ **Hydrastis Canadensis** is a valuable remedy in bronchitis, by reason of its expectorant action and its sedative effect on the cough. In the initial period of acute bronchitis the drug gives a negative result, but when the patient begins to expectorate it acts very well. He considers *hydrastis canadensis* to be superior to every other expectorant agent, and although its sedative

action on the cough is slower than that of opium it is much more persistent. Four times a day 5 to 20 minims of the liquid extract may be given in a little sugared water.

In an article on the treatment of chronic bronchitis, Dr. Lyon⁴ points out that it is nearly always a secondary condition following acute bronchitis or dependent upon organic disease, such as emphysema, Bright's disease, or various cardiac affections. Acute bronchitis, he thinks, is very apt to become chronic in those persons who have a neuro-arthritic tendency—or in other words those who possess a tendency to gout and allied affections. Sometimes, too, chronic bronchitis exists simultaneously with chronic disease of the nose and pharynx, and the relief of these lesions cures the bronchitis. Quoting Laennec as to the various forms of chronic bronchitis he divides them into the dry and moist form, the latter form in turn being divided into what is known as the mucous and purulent. Sometimes this purulent secretion becomes putrid, when it is known as "putrid bronchitis"; and finally there is, rarely, a membranous condition known as pseudo-membranous bronchitis. In association with these complications chronic tracheitis is sometimes present.

The treatment of bronchitis divides itself into several forms: first, the modification of the function of the bronchial mucous membrane so as to alter the secretion and also with the object of combating congestion; second, we must facilitate expectoration; third, we must calm the cough; fourth, we should improve the general health of the patient by hygienic and other measures. The agents which modify the bronchial secretion are numerous. The chief ones are those which after absorption are eliminated by the respiratory passages, and consist in greater part of the balsams, gum resins of plants containing essential oils, sulphur and its compounds, and the iodides. Of the first class of substances we may cite in particular **Tar**, **Balsam of Tolu**, **Benzoin**, **Turpentine** and **Terpine**, **Eucalyptol** and **Creasote**. The inconvenience associated with all these remedies is that they exercise an irritant influence upon the stomach. **Copaiba**, which is rarely employed because it has not a good reputation, nevertheless is very efficacious. Its essence is eliminated by the respiratory mucous membrane, and the resin is slowly eliminated by the kidney. Dujardin-Beaumetz recommended its association with tar. He prescribed 4 to 8 capsules containing 7 grains of equal parts of copaiba and tar.

Turpentine is usually employed in capsules holding 3 to 4 minims, 6 to 8 of which are taken daily, but terpine has quite largely taken its place. The great difficulty with the administration of creasote in

cases of bronchitis is the irritant influence which it exercises upon the stomach. There is no doubt, however, that creasote aids in getting rid of the secretion and acts deleteriously upon the tubercle bacillus.

Eucalyptol may be prescribed in capsules containing 1 grain; these may be given three or four times a day. Lyon thinks that eucalyptol is preferable to turpentine, as it is not so apt to produce disturbances of the stomach and kidneys.

As sulphur tends to congest the bronchial mucous membrane it is only to be employed during the period of the decline of the bronchitis when the secretion resists the action of the balsams. The **Iodides** are particularly efficacious in those cases in which the bronchitis is associated with emphysema, particularly if arterio-sclerosis is present.

They liquefy secretions and aid in their expectoration from the lung. They have, however, the inconvenience attendant upon the administration of any iodide, namely, the loss of appetite and the other evidences of iodide intolerance. They must therefore be given with prudence. It is well to interrupt their administration every three or four days for a short period. The doses should vary from 3 to 15 grains a day. Iodides are advantageously associated with **Codeline** or with **Belladonna**.

Dr. Arthur Davies⁵ emphasizes the value of **Ipecacuanha Wine** in the form of spray, $\frac{1}{2}$ to 1 drachm of the wine being used three or four times a day; the patient should be directed not to swallow the wine. The class of cases suitable for this treatment are those in an early stage with much dyspepsia and tenacious sputa. The disadvantages of the inhalations are that vomiting sometimes follows, and that spasmodic dyspnoea may result. It is not suited for cases of asthma.

In the bronchitis of the aged, Maragliano⁶ recommends the following formula:—

R Acid. Benzoic gr. ivss | Acid. Tannic gr. ij $\frac{1}{2}$
M. For one cachet. Four or five such cachets to be taken daily.

Dr. Sidney Ringer⁷ has found **Tincture of Belladonna** in 10-minim doses thrice daily or oftener very useful in checking the secretion and relieving cough in cases of bronchitis attended with profuse expectoration, such, for instance, as occasionally occurs after the administration of ether.

Dr. Bampton⁸ has used **Atropine** successfully in checking the excessive bronchial secretion resulting from the administration of pilocarpine.

Mr. Davies,⁹ of Sherbourne, recommended some years ago the inhalation of 1 grain of extract of belladonna in $\frac{1}{2}$ -oz. of water by means of Siegle's inhaler. He observed that after the patient had

inhaled the solution for a few minutes the breathing became quiet and easy, and before the $\frac{1}{2}$ -oz. was exhausted the patient was asleep.

In cases of bronchitis in which dry sounds predominate, and in which the patient suffers from spasmodic attacks of dyspnoea, I have found the administration of small doses of **Trinitrine**, either added to an expectorant mixture or given in the following formula, acts like a charm :—

℞ Liq. Trinitrini	℥iv	Tinct. Chlorof. Co.	℥ij
Spir. Ætheris Nit.	℥iv	Aquam ad	℥vj
M. A tablespoonful every three or four hours.			

Rosenfeld¹⁰ has obtained good results in the treatment of putrid bronchitis by the injection of a 5 per cent. solution of **Nitrate of Silver** into the trachea. He asserts that 1 to 2 cubic centimètres of this solution may be injected each day without provoking an excessive cough. As a result there is a diminution in the quantity of the sputum, disappearance of its fetid odour, and an amelioration of the bronchial symptoms.

Balsamics should not be used in the acute stage of bronchitis, as they can at this period only irritate the already inflamed mucous membranes. Congestion of the respiratory passages has often been seen to follow a too free administration of syrup of tolu.¹¹

REFERENCES.—¹ "Med. Age," Oct. 10, 1896; ² "Ind. Lancet," May 1, 1897; ³ "Med. Press and Circ.," May 19, 1897; ⁴ "Therap. Gaz.," May 15, 1897; ⁵ "Lancet," Dec. 5, 1896; ⁶ "Med. Rec.," Sept. 26, 1896; ⁷ "Brit. Med. Journ.," Nov. 21, 1896; ⁸ *Ibid.*, Jan. 16, 1897; ⁹ *Ibid.*, March 20, 1897; ¹⁰ "Therap. Gaz.," April 15, 1897; ¹¹ "Med. Rec.," Nov. 7, 1896.

BRONCHITIS (in Children). *H. Dwight Chapin, M.D., New York.*

Dr. Renant¹ advises **Warm Baths** in the treatment of diffuse bronchitis in children. Whenever the rectal temperature, taken every three hours, reaches or passes 102° F., he proceeds to put the child in a bath at 101.5° F., leaving him in the water seven to eight minutes, keeping the head wet with water at the temperature of the room. When the child is over two, a little champagne or brandy and water is given in the middle of the bath, and he is wiped rapidly with hot towels.

REFERENCE.—¹ "Journ. Amer. Med. Assoc.," vol. xxvi., No. 20, 1896.

BURNS.

Priestley Leech, M.D., F.R.C.S.

TREATMENT.—Mr. Benson¹ suggests the use of, what he calls, an antiseptic cage. The principle is to have a current of dry pure air constantly passing over the wound, and to have the discharges drained

or washed off as soon as they are formed. A cage of some description is placed over the wound and the dressings are applied outside the cage. The cage may be formed out of tin, or a large wire cradle will do for the body, or for small wounds two pieces of glass tubing may be fixed to the skin with strapping and gauze stretched over them. This method the author has used with success in skin grafting after amputation of the breast. The wound can be easily dressed by lifting the gauze or towel soaked in antiseptic solution off the cage and douching with weak lotion.

The granulations, previously œdematous, become small, red and firm, the discharge ceases entirely, the wound becomes dry and healing is uninterrupted. For the operation of skin grafting this method is particularly useful. The grafts are cut from a purified surface and put on the prepared wound. Protective is placed over them and pressure applied in the ordinary way. This is left for some five or six hours—not too long or the protective becomes adherent to the grafts and they may be dragged off; if pressure is applied for too short a time serum is poured out between the wounds and the grafts. After five or six hours the wound is undressed and put up in the antiseptic cage. The grafts can then be carefully watched, and once or twice a day douched with some weak lotion (1 in 2000 perchloride).

REFERENCE.—¹ "Lancet," p. 1373, vol ii., 1896.

T. Colcott Fox, M.B.

Picric, or Carbazotic Acid, has long been used, especially in France, as a useful application for superficial burns, and particularly by Thierry and Louis Filleul. It is said to be analgesic, antiseptic, and keratogenous. It is a product resulting from the action of nitric upon carbolic acid. A drawback to its use is its staining properties. Papazoglou¹ says that when the lesions are extensive the patient may be treated in a bath of the acid; if they are limited a solution of the acid may be applied on antiseptic gauze to the part. The applications are employed for three or four days, strict antiseptic precautions being maintained. The following is the formula for the solution :—

R̄ Powdered Picric Acid	75 grs.	Boiled or Distilled	
Alcohol	2 ozs.	Water	1 quart

Others give the so-called saturated solution as 90 grains dissolved in 3 ounces of alcohol and then diluted as above, with a quart of water. D'Arcy Power² has highly recommended it. The clothing over the injured part should be gently removed, and the burned or scalded portion should be cleaned as thoroughly as possible with a piece of

absorbent cotton soaked in the lotion. Blisters should be pricked, and the serum allowed to escape, care being taken not to destroy the epithelial surfaces. Strips of sterilized gauze are then soaked in the solution of picric acid, and are so applied as to cover the whole of the injured surface. A thin layer of absorbent cotton is put over the gauze, and the dressing is kept in place by a light linen bandage. The moist dressing soon dries, and it may be left in place for three or four days. It must then be changed, the gauze being thoroughly well moistened with the picric acid solution, for it adheres very closely to the skin. The second dressing is applied in exactly the same manner as the first, and it may be left on for a week.

The great advantages of this method of treatment are : First, that the picric acid seems to deaden the sense of pain ; and, secondly, that it limits the tendency to suppuration, for it coagulates the albuminous exudations, and healing takes place under a scab consisting of epithelial cells hardened by picric acid. A smooth and supple cicatrix remains, which is as much superior to the ordinary scar from a burn as our present surgical scar is superior to that obtained by our predecessors, who allowed their wounds to granulate.

Miles,³ of Leith Hospital, also speaks enthusiastically of this treatment. The method adopted was to cleanse the parts with weak carbolic lotion, to prick the blisters, to apply surgical lint soaked in a saturated solution of picric acid (picric acid 3jss ; absolute alcohol 3iij ; water to 3xl), wool, and a many tailed bandage. The subsequent dressing was guided by the discharge, temperature, etc., and the same dressing was used with the precaution of never tearing away adherent lint. Chloroform was given during the dressing, especially in children. In many cases it was well to dress twice a week. The advantages of the method were : (1,) Simplicity ; (2,) Painlessness ; (3,) Asepsis ; (4,) Small amount of discharge ; (5,) Infrequent dressings ; (6,) The astringent action of the picric acid in preventing inflammation ; (7,) Its effect in promoting the growth of epithelium ; (8,) Rapid separation of sloughs ; (9,) Absence of poisoning symptoms ; (10,) Economy in dressings. The disadvantages were the staining of the hands and bed clothes. For the former, smearing with vaseline before and washing with alcohol after, lessened this disadvantage if it did not entirely obviate it. The cases to which the treatment was most applicable were superficial burns, but Miles had used it in burns of even the fifth degree.

The Limits of Picric Acid Treatment.—After inflammation had subsided and granulations had formed, the treatment must be appropriate

to that particular stage however produced. But this stage was much more quickly reached by picric acid than by any other method of preliminary treatment. The results were less tissue destroyed and smaller cicatrices.

Lutaud,⁴ of Paris, arrives at the following conclusions: For superficial burns of the first degree a solution of picric acid (2 per cent.) can be used without renewing the dressing. For deep burns of the second, third, and fourth degrees it is necessary to wash the burns with an antiseptic solution which is not caustic; permanganate of potassium (1 per 1000) has been recommended, but Lutaud prefers picric acid (2 per cent.). As soon as the blebs are formed they must be opened without destroying the epidermis. One of Langlebert's wool dressings should then be applied, and changed every twelve hours that the sore may be watched and adhesions prevented. The pain is immediately relieved, and the lesions are kept in an aseptic condition.

About a week afterwards, when the vesicles begin to dry up, the following should be applied with a brush:—

R _x Oil of Sweet Almonds, 30 grammes	Yolks of New Laid Eggs, 2
Glyco-carbolic Acid 30 grammes	

The following powder should be applied in order to form a protective covering:—

R _x Aristol	4 grammes Talc	16 grammes
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From time to time the covering must be pressed in order to ascertain that there is not an accumulation of serum or pus; if there is any indication of the presence of either, the crust thus formed must be removed by applying Langlebert's wool dressing. In burns of the fourth degree the dressing must be renewed every two days and the suppurations healed like an ordinary wound. Cicatrization can be hastened by the application of nitrate of silver and by flesh grafts.

Shalders Miller suggests **Ext. Hamamelidis Liq. Destillatum** or **Hazeline** in place of picric acid.

Poggi in a recent thesis highly recommends **Potassium Nitrate** in baths, compresses steeped in a saturated solution, or lotions. It is a refrigerant, antiphlogistic, and relieves pain.

Vergely, of Bordeaux, has obtained favourable results in burns of the first and second degrees by covering up the affected parts with a thick layer of a *paste prepared by mixing Calcined Magnesia with a certain quantity of water.*

Pollak,⁵ after thorough washing of the patient, pricking of the vesications under antiseptic precautions and douching of the parts

with weak **Potassium Permanganate** solution, applies the following ointment :—

R̄ Acetanilid		Petrolatum	3v
Zinc. Oxid.	āā 3ss		
or,			
R̄ Acetanilid		Zinc. Oxid.	3ss
Iodoform		Petrolatum	q.s. 3viij
Boric Acid	āā 3ss		

After this dressing was applied, the patient was wrapped in cotton. These dressings are repeated daily. When the sloughs are separating the odour becomes almost unbearable ; at such times solution of hydrogen dioxide was used in addition to the permanganate. As soon as the burns begin to dry up the salve is discontinued and some dusting powder is substituted, the most desirable being acetanilid or boric acid. The constitutional treatment varies according to the severity of the case. **Whiskey** was used in large quantities, particularly in cases in which marked chills were of daily occurrence. **Quinine** and **Iron** were given four times a day in small quantities. **Digitalis** and **Strychnine** were of service in cases in which the heart was yielding to the general depressed condition. **Morphine** was resorted to to allay the excessive pain. Several cases became delirious, but **Hyoscine Hydrobromate** in $\frac{1}{100}$ grain doses, with **Bromides** in large doses were given *pro re nata* with good effect.

Other remedies extolled are **Ichthyol** (Leistikow) and **Thiol** (Bidder of Berlin, and Givardou of Paris).

Siebel⁶ uses **Europhen** instead of iodoform, after the customary preparation of the burnt areas. Where the powder is unsuitable he recommends a 3 per cent. ointment (europhen, 3'0; ol. oliv., 7'0; vaseline, 60'0; lanolin, 30'0). In a similar manner **Aristol** may be used (aristol, 1 part; olive oil, 2 parts; dissolve and add vaseline, 8 parts).

REFERENCES.—¹"Thèse de Paris," 1896; ²"Brit. Med. Journ.," Sept. 12, 1896; ³"Edin. Med. Soc.," July, 1897, and "Brit. Med. Journ.;" ⁴quoted "Brit. Med. Journ.;" ⁵"Philadel. Polyclin.," Oct. 24, 1896; ⁶"Berlin. klin. Woch.," No. 8, 1897.

CALCULUS (Vesical).

E. Hurry Fenwick, F.R.C.S.

Brigade-Surgeon Lieut.-Colonel Keegan¹ states that the great majority of vesical calculi which are met with in girls and women are best removed by litholapaxy. Any surgeon who at the close of the nineteenth century adopts as a routine practice the old method of rapid dilatation of the female urethra with extraction is behind the age.

As stone in the bladder is about thirty times as common in the male as in the female, it is obvious how rarely litholapaxy in women need be carried out.

Keegan endorses Barling's assertion that lithotomy and litholapaxy are safer operations in boys than suprapubic lithotomy, and points out that surgeons in India had long ago arrived at the same conclusion. He adds: "The best operation for a boy, say, of seven or eight years, with a urethra of normal calibre, suffering from the presence of a small uncomplicated stone, is unquestionably litholapaxy. Such being the case, the question arises, Is a surgeon justified in cutting such a boy because he happens either not to have the necessary instruments for performing litholapaxy or, having them, does not know how to use them? I unhesitatingly answer, No; if by any possibility such a patient can be transferred to the care of one skilled in performing litholapaxy. The crushing of a stone in a boy's bladder is not an operation which every general surgeon in this country is expected to be able to perform. It is an operation for those who have enjoyed unusual opportunities of perfecting themselves in the use of the lithotrite, and it is not on all fours with operations of emergency such as tracheotomy, the arrest of hæmorrhage, an amputation, or an operation for strangulated hernia. No surgeon who has been deprived of opportunities of learning the practical use of the lithotrite need be ashamed to confess that he feels himself unequal to performing litholapaxy on a young boy. The extension of litholapaxy to cases of stone in boys has reduced the mortality following stone operations among this class of patients in India by more than 50 per cent. to what it was ten or twelve years ago."

Keegan feels certain that perineal lithotrity (Dolbeau) ought to occupy the place now held by lateral lithotomy in dealing with very large and hard calculi in adult males, *i.e.*, those calculi which resist the power of the largest lithotrite which can be safely introduced into the bladder per urethram. He is certain that the giant lithotrites which are now made could, when introduced through a small incision in the perineum, readily break up a mulberry calculus weighing four to six ounces.

P. J. Freyer² gives particulars of forty-nine calculi weighing two ounces and upwards. The author states that he has almost completely abandoned every other method of treatment of stone in the bladder in favour of litholapaxy. He defines a large stone in the adult as one of two ounces and upwards.

In crushing large calculi there are several special points to be observed. It will be found sometimes that when a large and hard stone is grasped by the lithotrite and the instrument is screwed home with the whole strength the stone will not at first yield. If we wait for a few seconds it is not unlikely that it will do so and with a loud report.

If not, unscrew the lithotrite and catch the stone by another axis and screw home again. By repeating this process over and over again the stone will, as a rule, yield in the end.

In considering the thirty-one litholapaxies included in the list of forty-nine large calculi, the author comments upon the fact that in the majority of these cases the stone was caught in the first instance by the long axis, which had to be changed for a shorter axis before the lithotrite would lock. This is due to the fact that, as a rule, a stone lies in the bladder with its long axis in the antero-posterior direction.

If, however, the stone be more or less round and so large that the lithotrite fails to lock on it in any direction, the author recommends that the jaws of the instrument should be dug into one side of the stone, and be held in this position while the lithotrite is screwed home. Thus, a portion of the crust will be scraped off. This process is repeated again and again, and unless the stone be extremely hard it is wonderful the rapidity with which it will be reduced to such a size as to permit of the lithotrite locking on it. The largest stone which the author has crushed by this method was six and one-eighth ounces, the operation lasting two hours.

The following tabular statement shows the author's results of the different varieties of operation for large stone :—

Operation.	Number of Operations.	Average age of patient.	Average weight of stone.	Average number of days in hospital.	Mortality.
Suprapubic lithotomy	4	27 $\frac{1}{4}$	oz. dr. grs. 5 5 0	34	2, or 50 %
Perineal ,,	14	42 $\frac{1}{4}$	2 5 23	30	4, or 28 $\frac{1}{2}$ %
Litholapaxy	31	52	2 5 2	10 $\frac{1}{2}$	3 or 9 $\frac{2}{3}$ %

Freyer lays it down as an absolute rule that in no case, whether in the male or the female, the adult or the child, should a stone, whether small or large, be subjected to a cutting operation till after trial litholapaxy is found not to be feasible.

Reginald Harrison ³ in the Bradshaw Lecture remarks that a small proportion of stone cases will be met with where, by reason of the condition of the bladder and the urinary apparatus generally, the ordinary operation of crushing is not applicable. In these cases not only must the stone be removed, but provision made for the drainage of the bladder, and for the latter lithotrity in no way adequately provides. Where the stone is between 2 and 3 ounces in weight, and the prostate and bladder more or less involved in suppuration and chronic inflammation, various substitute proceedings are adopted.

Guyon and others have estimated the mortality of suprapubic cystotomy in males of advanced age, who are generally the subjects of these complications, at about 50 per cent., and with this the author concurs.

He carries out a modification of Dolbeau's method of perineal lithotrity in suitable cases. In the first place an ordinary *bouttonnière* or median perineal cystotomy is practised on a grooved staff sufficient to admit the introduction of the finger into the bladder as for digital exploration. This represents all the dilatation of the prostate or neck of the bladder that is attempted.

The next step is to withdraw the index finger and substitute a pair of crushing forceps made for this purpose, though in other respects resembling an ordinary pair of lithotomy forceps, either straight or curved. They are made in different sizes, the most powerful having a screw at the handle by which the full crushing power is brought into play. In circumference the combined blades correspond in size with an average index finger, and contain well within cover a strong cutting rib running down the centre of each, by which the fragmentation of the stone or stones is chiefly accomplished. By means of these forceps the stone is sufficiently reduced in size to be either easily withdrawn in fragments from the bladder by these instruments, or to be sluiced out with a cannula and an ordinary wash bottle as used for litholapaxy. Straight cannulæ, such as these, will be found the most convenient for this purpose. After the stone has been withdrawn, and the bladder and prostate carefully examined either with the sound or the finger, the drainage tube is introduced and retained for as long as necessary in accordance with the nature of the case.

In one case the hardest kind of urate stone, the fragments weighing over 3 ounces, was broken up and withdrawn in this way in something like five minutes, a process which would have occupied an hour or more had it been expedient to substitute lithotrity. A grape-like third lobe, which was in the way, was also easily removed. The patient made a rapid and complete recovery.

The author has selected this method in fifteen instances out of considerably over three hundred cases of lithotrity, and has so far had no deaths or recurrence of stone following it. The chief points in its favour are these :—

(1,) It enables the operator to crush and evacuate large stones in a short space of time.

(2,) It is attended with very small risk to life as compared with other operations, such as lateral or suprapubic lithotomy, and is well

adapted to old and feeble subjects, when, for any reason, crushing is inadmissible.

(3,) It permits the operator to wash out the bladder and any pouches connected with it more effectually than by the urethra, as the route is shorter, and the evacuating catheters employed of much larger calibre.

(4,) The surgeon can usually ascertain, either by exploration with the finger, or by the introduction of forceps into the bladder, that the viscus is cleared of all *débris*.

(5,) It enables the surgeon to deal with certain forms of prostatic out-growth and obstruction complicated with atony of the bladder in such a way as to secure not only the removal of the stone, but the restoration of the function of micturition.

(6,) By the subsequent introduction and temporary retention of a soft rubber drainage tube, states of cystitis due to the retention of urine in pouches and depressions in the bladder wall are either entirely cured or are permanently improved.

To lock up unhealthy ammoniacal urine in a bladder that cannot properly empty itself after a lithotomy is to court the formation or recurrence of a phosphatic stone. Hence it is well suited to some cases of recurrent calculus.

It is well adapted for some cases of stone in the bladder complicated with stricture in the deep urethra, as it enables the surgeon to deal with both at the same time.

REFERENCES.—¹“Ind. Med. Rec.,” Aug. 1, 1897; ²“Lancet,” Dec. 12, 1896; ³“Brit. Med. Journ.,” Dec. 12, 1896.

CANCER. (See also “Breast.”) *Priestley Leech, M.D., F.R.C.S.*

Non-operative Treatment of.—In cases which are too advanced for treatment by the knife, or where the patient refuses operative treatment, various other methods have been tried. The latest of these methods is that suggested by Denissenko, who has used injections of the watery extract of chelidonium majus. Winter and Schmitt¹ have tried this treatment in fourteen cases of uterine carcinomata. They used subcutaneous injections at several points in the abdomen once a week. No improvement took place in any case; in all the general health was unfavourably influenced, deteriorating far more rapidly than in untreated cases of cancer too far advanced for surgery, and the injections caused severe pain. They conclude that chelidonium should be rejected as a drug for cancer.

The New York Surgical Society appointed a committee to investigate the treatment of malignant disease by erysipelas toxins; they reported² that in no case had they found any amelioration which held

out a prospect of permanent cure. In some cases the rate of growth had been more rapid under the treatment. The treatment imposed a severe tax upon the strength of the patient, and in cases of improvement the correctness of the diagnosis is open to doubt. Time has often been lost in operable cases by postponing operation for the sake of giving this method of treatment a trial, and if this method is to be used at all it should be confined to absolutely inoperable cases.

Petersen³ in a paper on "The Principles and Results of Bacteriotherapy in Malignant Disease," comes to the following conclusions : (1,) None of the present methods have any influence over carcinomata ; (2,) In sarcomata only in very exceptional cases can any good result be expected ; the cause of this exceptional reaction of certain tumours is unknown to us ; further experiments should be reserved for inoperable cases of sarcoma or as a prophylactic after operation ; (3,) The good result is directly proportional to the strength of the general (less than to that of the local) reaction, and therefore to its dangerousness. In the order of their activity come : injection of virulent streptococci ; injection of mixed sterilized growth of streptococcus and prodigiosus ; sterilized streptococci ; filtrate of streptococcus cultures, and finally cancer serum. The activity of the sterilized mixed culture depends for the most part upon the prodigious toxins. Cancer serum corresponds in its properties and its activity to a filtrate culture of attenuated streptococci ; (4,) The effect of the toxin depends upon the general reaction of the organism (especially upon the fever) as well as upon the local reaction of the tumour (parenchymatous inflammation) ; (5,) Against the doubtful advantages must be placed the dangers of an intoxication and of a stimulation of the growth of the tumour. Petersen gives a *résumé* of the various methods that have been used, and a list of cases which have been treated in various ways.

Honsell⁴ writes upon the treatment of four cases of cancer by the method of Cerny and Trunecek.⁵ The treatment consists of painting the new growth after wiping away all pus, etc., with a mixture of **Acid Arsenicum**, 1 in 75 of **Ethylie Alcohol**, and an equal quantity of **Distilled Water**. The wound after twenty-four hours is covered with an eschar which, after daily repetition of the painting, comes off. Honsell has tried this treatment in four cases of epithelioma in Brun's clinique. One case of epithelioma of the nose was cured in three or four weeks ; in the other three cases the growth increased while the treatment was being carried out, and in the interests of the patients it had to be given up. [There is by no means a remote danger of arsenic poisoning, if used to large surfaces.—P. L.]

Dr. J. Griffith-Davis⁶ and M. Dubarry⁷ both relate cases of epithe-

lioma and carcinomata treated by injections of **Methyl Violet**, in 10 or 20 per cent. solutions. Some of the cases apparently recovered; others were better for a time and then relapsed.

Atkinson⁸ uses **Sodium Ethylate** as a caustic. He first carefully cleans the part with pyrozone and then dries it. He makes the part anæsthetic with a 10 per cent. cocaine solution and afterwards applies a full strength solution of sodium ethylate by means of a glass rod. The full strength is got by allowing the crystals of sodium ethylate to deliquesce. The following powder is applied :—

B. Acetanilid	5j	Boric Acid	5j
Afistol	5ij		

Apply thick over the whole diseased surface.

He then spreads vaseline over a piece of sheet wadding large enough to cover the whole surface, and puts absorbent cotton and a bandage over this. The ethylate is a very painful caustic, and even cocaine will not always relieve it. Considerable œdema follows the first application, but soon disappears. He sees the patient every second day, but afterwards only touches the points that are diseased. Atkinson keeps the ethylate in small corked bottles and is careful not to let it touch the cork.

REFERENCES.—¹"Centralbl. f. Gynäk.," No. 27, 1897, quoted in Epit. "Brit. Med. Journ.," July 24, 1897; ²"Annals of Surg.," July, 1896; ³"Beit. zur Klinis. Chir.," Band. 17, Heft 2, 1896, and another paper in "Therap. Monats.," Jan. 1897; ⁴*Ibid.*, Band. 18, Heft 3; ⁵"Sém. méd.," p. 161, 1897; ⁶"New York Med. Journ.," Oct. 10, 1896; ⁷"Med. Press and Circ.," May 5, 1897; ⁸"New York. Med. Journ.," Oct. 17, 1896.

CANCER (in Australia). *G. Lane Mullins, M.A., M.D., Sydney.*

Cancer is less fatal in Queensland than in any other Australian colony. The mean annual death rate per thousand inhabitants in the colonies (1887-91) is: Victoria, 0.55; Tasmania, 0.50; New Zealand, 0.41; West Australia, 0.40; New South Wales, 0.38; Queensland, 0.29. Although the Australian colonies have some of the lowest death-rates in the world from cancer, the disease is increasing. Statistics show that in 25 per cent. of the specified cases the stomach is the organ affected. The organ most frequently affected in females is the uterus. The largeness of the families borne by the great majority of the women who die of disease of the uterus is very striking. Males suffer from cancer of the head and neck, abdomen, and upper and lower extremities to a much greater extent than females.

The cancer-age is from thirty-five years upwards. Cancer is

slightly more prevalent among males than females. The deaths occur chiefly among natives of Great Britain and Germany. Climate appears to have little or no effect on the production of the disease.

REFERENCE.—“Aust. Med. Journ.,” Jan. 20, 1896.

CANCER OF RECTUM. (See “Rectum.”)

CANCER OF STOMACH. (See “Stomach.”)

CARATÉS.

T. Colcott Fox, M.B.

This hitherto mysterious skin affection is found widely spread over equinoxial America from Mexico to Bolivia. Prof. Montoya y Florez, in a letter to Sabouraud, states that the classical European form of tinea circinata is there nearly entirely replaced by the diverse varieties of caratés (violet, bluish violet, violet black, brick red, and Indian ink). Of caratés, 95 per cent. are met with to 5 per cent. of the trichophyton of European type. All these varieties, except the red, in regression leave achromic patches, *i.e.*, the pigment of the skin is destroyed and its formation even suppressed.

Caraté is a malady of chronic course, which may involve the entire surface of the skin in festooned geographical areas which become scaly. After two years' investigation the professor has isolated about twenty different fungi causing this disease.

REFERENCE.—“Ann. de dermat. et de syph.,” p. 464, Mai, 1897.

CEREBRO-SPINAL MENINGITIS (Epidemic).

W. Gilman Thompson, M.D., New York.

William Frew¹ considers the prevalence of this disorder in Scotland, cites several typical cases, and refers to the disease being wrongly diagnosed as enteric fever. O. Huebner² found a specific diplococcus in seven cases in which pus was obtained by **Spinal Puncture**.

REFERENCES.—¹ “Brit. Med. Journ.,” Oct. 10, 1896; ² “Deut. med. Woch.,” 1896, xxii, 423.

CERVIX (Lesions of).

Theophilus Parvin, M.D., Philadelphia.

Lutaud¹ recommends non-operative treatment of ulcerations, erosions, and lacerations of the cervix, as follows:—

Erosion of the Cervix.—Astringents should be applied every two days, such as **Tincture of Iodine**, or solution of **Nitrate of Silver** 1 in 30. After the application a cotton-wool tampon should be placed over the cervix. Medicated tampons are also useful; the author recommends the following solution:—

R_x Glycerine 100 parts | Sulphate of Zinc 2 parts

When the cervix is very voluminous and reddened, **Ignipuncture**

is useful ; three or four punctures half an inch deep should be made upon each lip. This can usually be done without an anæsthetic.

Ulceration of the Cervix.—Recent ulcerations usually yield to one or two applications of the nitrate of silver stick. In the case of old ulcers the application of the following powder is useful :—

℞ Iodoform	40 parts	Subnitrate of Bismuth	10 parts
Salicylic Acid	10 „	Camphor	5 „

The camphor conceals the odour of the iodoform successfully. The powder should be applied with an insufflator to the affected spots only, and a wool tampon placed beneath the cervix. In twenty-four hours the tampon is removed and the cervix syringed with the following solution :—

℞ Salicylic Acid	4 parts	Water	450 parts
Spirit of Lavender	30 „		

Two tablespoonfuls to be added to a quart of water.

The application of the powder is then repeated. In a few days the ulcer is healed.

Laceration of the Cervix.—Whenever the patient's consent can be obtained, Emmet's operation for repair of the cervix should be performed. Many patients, however, will not allow an operation, and in these cases medical treatment should be tried. The author recommends that a two-inch bougie containing 5 grains of **Aristol** made up with powdered gum arabic should be introduced daily into the patulous cervix and retained in position with a cotton-wool tampon. It should remain for twenty-four hours, and then the cervical canal must be syringed with the solution of salicylic acid mentioned above, and a fresh aristol bougie introduced.

REFERENCE.—“*Rev. pratique d'obstet. et de gyn.*,” Jan., 1897.

CHAPPED HANDS AND FISSURED SKIN. T. Colcott Fox, M.B.

The three following formulæ were recently recommended for fissured skin :—

℞ Menthol	gr. x	Salol	āā ℥xx
Olive Oil		Lanolin	℥iss
M. To be applied twice daily.			
℞ Lanolin	℥ij	Salol	℥j
Glycerine	℥iv	Menthol	gr. xv
Boric Acid	℥iss	Oil of Citronella	℥ij
M.			

Herbert Skinner² says **Emol Keleet** is the best preparation in a deeply fissured skin. It has a powerful softening effect :—

℞ Emol Keleet	℥ij	Lanolin	℥ss
Zinc. Oxidi	℥j	Vaselin	℥ss
Glycerin. Plumbi Subacet. q.s.			

Use sufficient glycerine of subacetate of lead to form the powders into a thin paste; mix with lanoline and vaseline. It should be applied at night, and the hands covered with lint.

REFERENCES.—“Practitioner”; “Brit. Journ. of Dermat.”

CHELOID.

T. Colcott Fox, M.B.

Any remedy which promises well in the treatment of such an intractable new growth as cheloid or scar tissue is worth extended trial. R. C. Newton¹ has followed Sinclair Tousey's lead, and tried the effects of repeated hypodermic injections of 15 to 20 minims of a 10 per cent. solution of **Thiosinamine**, an allyl-sulpho-urea procured from the volatile oil of horseradish by the addition of ammonia. It is said that the cheloids diminished in size and hardness, and the tight contraction following a burn was improved. It will be remembered that Hans Hebra introduced this remedy for lupus vulgaris, and injected hypodermically a 15 per cent. alcoholic solution, beginning with $\frac{1}{10}$ of a cubic centimetre, and increasing to 1 cubic centimetre. Though the remedy promised favourable results in lupus vulgaris and corneal opacities, it has apparently not stood the test of further experience. Both Newton and Tousey had seen disagreeable constitutional symptoms after the injections.

REFERENCE.—“New York Med. Journ.,” March 20, 1897.

CHEST (Puncture of).

F. de Havilland Hall, M.D., F.R.C.P.

Is exploratory puncture of the chest ever attended with fatal results? My experience would have led me to give an unqualified denial to the question, but a case recorded by Dr. A. Fraenkel¹ shows that under certain conditions there may be a risk in puncturing the chest. A man, aged seventy-three years, had signs of left-sided pleural effusion with severe emphysema. Puncture was made in order to determine the presence of fluid, but with a negative result. Soon after this the patient had collapse symptoms, with cyanosis and frequent respiration, and died in four days. During life the upper left part of the thorax in front expanded less than the right, while the lower part of the left side was retracted strongly with each inspiration. There was no succussion, no metallic percussion-note. Autopsy revealed left-sided pneumothorax. The left lung was very much retracted, the pleural cavity empty. There was no evidence of inflammation. The lungs were soft and inelastic. On blowing up the left one no perforation could be found. Fraenkel concluded that the pneumothorax was due to the puncture, and warns against its use in cases of emphysema unless the indications are clear.

REFERENCE.—“Zeitschr. für Prakt. Aerzte,” Nos. 13 and 14, 1896.

CHICKEN-POX.*W. Gilman Thompson, M.D., New York.*

A. J. Rodacauachi¹ reports a case closely following measles, and having a definite incubation of twenty-three days.

REFERENCE.—¹ "Brit. Med. Journ.," Nov. 7, 1896.

CHOLERA.*James Cantlie, F.R.C.S.*

Hankin¹ states that in certain rivers in India the water exercises a bactericidal action upon cholera germs. He avers that water containing cholera germs, after a short course, say twelve miles, acts upon the bacilli in such a manner that all danger of their power of infecting is removed. Hankin ascribes this to certain acid substances in the river water, which are rendered volatile by heat. He further observes that cholera travels up stream, and announces the fact that the river water of the Jumna below Agra, after a twelve-mile course, is free of filth bacteria. The two statements are not new. As long ago as 1883, the writer observed that cholera in Egypt travelled up stream, and attempted to show that fish carried the infection up the river. The fact of a river purifying itself of filth is nowhere better illustrated than in the river Seine. Immediately below Paris the water is foul, the banks are bare of vegetation; neither fish nor plants can live in it. As the course of the river is followed, however, the water begins to improve; plants, and lower down fish appear, and still farther down the water is of as good a quality as before it reached Paris. There can be no doubt that Hankin's observation is correct, cholera germs, in harmony with all other bacteria, disappearing as they become more diluted, and acted upon chemically by the purifying processes inherent in river water.

Surgeon-Captain F. Smith, A.M.S.,² discusses this subject from material supplied by cholera-infected coolies travelling from Singapore to Penang. The circumstances were as follows: "On board several ships which were engaged carrying coolies, the thirty-six hours' journey between Singapore and Penang, cholera had several times broken out. As soon as the ships arrived in Penang, the choleraic cases were sent to the infectious diseases hospital, and the rest of the passengers were taken to the coolie dépôt, where they were put in quarantine under a police guard. Amongst these coolies, after intervals of ten or even fifteen days, cholera appeared. There was no thought or possibility of the disease being generated there, as the water supply of Penang is excellent, and there was no special sickness of any kind in Penang. The disease must have spread from coolie to coolie, the difficulty being to account for the long delay in appearance. Surgeon-Captain Smith doubts the five-day incubation period, which

is the usually accepted period in cholera. There is no doubt this outbreak was not water borne, but that cholera infection may continue after the acuteness of an epidemic is 'spent.' In this we have a conditions of things which, if not generally expected, is one which, nevertheless, frequently prevails.

Surgeon-Captain H. Herbert, I.M.S.,³ discusses several interesting points in connection with the spread of cholera. He denies the statement so often made that the endemic area of cholera lies in Lower Bengal alone, but rather inclines to the belief that cholera is endemic in every province in India except Sind and the Punjab, the differences between provinces being in the degree of infection only. There are two types of cholera with which we are familiar, the one attaining its maximum at once, the other developing more slowly. The former would point to importation from without, under conditions unsuited to the continued development of the organism; the latter characterized by multiplication of the indigenous organism, under increasingly-favourable natural conditions.

The connection of tanks, shallow-well, and deep-well water with cholera is ably handled by Surgeon-Captain Herbert. He states that the provinces of continuously high water level have cholera all the year round, and the heaviest mortality from that disease comes when the tanks are at their lowest. On the other hand, in the provinces of lighter rainfall and, consequently, lower water level, the opposite conditions obtain. A very low ground water level completely abolishes cholera prevalence. It has been observed that the point at which the want of rain began to lower the cholera rate was when the tanks and streams were drying up, thus driving the people to the use of purer well water, then at a considerable depth.

REFERENCES.—¹"Ann. de l'Institut Pasteur," March and Sept. 1896; ²"Lancet," Jan. 30, 1897; ³"Ind. Lancet," April, 1897.

W. Gilman Thompson, M.D., New York.

R. Pfeiffer and Vagedes¹ publish additional experiments in the serum diagnosis (see *Serum Diagnosis*, under "Fevers") of cholera, based upon seventy different cultures of true cholera bacilli and twenty of closely allied species. They derive an immunizing serum from the blood of immunized guinea-pigs, which, when added to pure cultures of cholera bacilli, causes loss of motion in the germs and subsequent disintegration. No other germ is similarly affected by this specific serum.

Achard and Bensaude² applied the serum test in eleven cholera patients with satisfactory agglutination of the bacilli (see *Serum*

Diagnosis under "Fevers"). In several instances the diagnosis was confirmed by the presence of cholera bacilli in the stools. Control experiments gave negative results.

A. Blachstein³ says that **Chrysoidin** precipitates cholera bacilli from a suspension of these microbes, and advises its use internally in teaspoonful doses of a 1 in 1,000 solution. He also recommends it for general disinfection against cholera.

E. Harold Brown⁴ has practised the Haffkine anti-cholera inoculation in one hundred and eleven cholera patients; five cases subsequently occurred among them, with three deaths; eleven cases occurred among one hundred and eight non-inoculated subjects, all of which proved fatal. A heated discussion upon the value of anti-cholera inoculation took place in the Calcutta Corporation,⁵ the opponents of the practice condemning its wholesale employment on the ground that the natural immunity from the disease amounts to 95 per cent. of the population. The question was adjourned without formal action, pending further study of the subject.

Arthur Powell⁶ summarizes all the published experiments in India in anti-cholera inoculations, concluding that moderate doses do not confer certain immunity; that doses large enough to occasion decided febrile movement seem to confer immunity, and that smaller doses confer very brief if any protection.

A. Nakagawa reports the use of Kitasato's **Anti-Cholera Serum** in one hundred and ninety-three cases among the Japanese, with the gratifying reduction in mortality from 70 to 20 per cent. In some cases symptoms follow the inoculations closely resembling those produced by the diphtheria antitoxin. These are chiefly: (1,) Urticaria; (2,) Arthralgia; (3,) Myalgia. As in case of the diphtheria antitoxin, the prognosis is better the earlier the inoculation is made. Among patients inoculated in less than eight hours, no deaths occurred, against a mortality of 38·7 per cent. in patients inoculated in from forty-eight to seventy-two hours.

Klein⁷ finds that cholera bacilli live in water less than half as long as typhoid bacilli. The cholera bacilli lived forty-two days in common London hydrant water, in spite of the antagonistic action of the other bacteria commonly present.

Chauvin,⁸ of Liège, employs the following prescription, particularly for the relief of the cramps and vomiting:—

R̄ Dil. Hydrochloric acid	℥ xv	Peppermint-water	℥ iv
Pure Pepsin Essence	℥ xx	Syrup of Orange Flower	℥ j
Wine of Opium	℥ xx		

A teaspoonful each hour.

F. C. Shaw⁹ describes the occurrence of eleven cases of cholera among Indian passengers sailing for Fiji. The mortality was 73 per cent.

E. H. Hankin¹⁰ reports an outbreak of cholera in an officer's mess in India, which he ingeniously traced to the use of a dishcloth, upon which cholera germs had been found. The cloth had been washed in a distant stream near a spot where there were several cases of cholera among the natives. Cholera bacilli were found in the sand along the stream at this place.

Cholera Morbus.—Mathieu¹¹ prescribes in this affection:—

℞ Lactic Acid	ʒij-iv	Boiling Water	1 quart
Sugar of Milk	ʒij		

M. Sig.—To be taken during twenty-four hours.

Intravenous **Saline Injections** of 6 ounces of the following solution are slowly given:—

℞ Distilled Water	1 quart	Sodium Chloride	ʒj
Sodium Sulphate	ʒijss		

REFERENCES.—¹ "Centralbl. f. Bacteriol.," 1896, xix, No. 11, 385; ² "Presse méd.," Sept. 26, 1896; ³ "Münc. med. Woch.," Nov. 3, 10, 1896; ⁴ "Ind. Med. Gaz.," July, 1896; ⁵ "Ind. Med. Chir. Rev.," Aug., 1896; ⁶ "Lancet," 1896, No. 3803, p. 169; ⁷ "Centralbl. f. Bacteriol.," Nov. 5, 1896; ⁸ "Therap. Gaz.," Feb. 15, 1897; ⁹ "Lancet," Oct. 24, 1896; ¹⁰ "Brit. Med. Journ.," Dec. 26, 1896; ¹¹ "Journ. des Praticiens," May 16, 1896.

CHOREA.

Græme M. Hammond, M.D., New York.

M'Kenzie and Galloway¹ report four cases of chorea treated by **Systematic Muscular Exercises**. In two no improvement occurred, but the circumstances were very unfavourable, and the patients only remained in the class a short time. In the other two cases the results were very gratifying. The first case, a boy, eight years old, was permitted to join a gymnastic class and take light work. At first he could not make the required movements, but he was allowed to continue and do the best he could. After the first lesson it was evident that the inco-ordination was less marked. The exercises were continued daily, and in less than a week every sign of chorea had disappeared. The other case was a girl, aged eleven, who had suffered from chorea for two years, and had ceased to improve for several months though under competent supervision. After three weeks' treatment, careful examination revealed only an occasional slight inco-ordinate movement of the right foot in walking.

Habit Chorea.—Sinkler,² in an interesting article on this subject, accepts Mitchell's view that this disease is really a form of chorea.

In his experience the parts most commonly affected were the eyelids, then the facial muscles, and next the head and neck. In many cases optical defects were observed. The principal abnormalities were simple hypermetropia or hypermetropia with astigmatism. Of forty-nine cases eight were apparently cured by appropriate glasses. Obstructive diseases of the nose were found to be common complications, and are to be regarded as causes by favouring facial movements. Two or three cases were cured by nasal treatment.

He considers the prognosis depends largely upon the length of time the disease has lasted before the patient is seen. In a great proportion of cases, if seen early enough, the disease may be completely and permanently cured. In adults in whom the disorder has lasted for some time, it is difficult, if not impossible, to arrest the movement. Habit-chorea has a tendency not only to become uncontrollable the longer it lasts, but also to increase its range and involve other groups of muscles. He does not believe that any lesion exists in the brain or cord. It is probable that the group of nerve cells which supply the affected muscles acquire a habit of discharging at irregular intervals independently of any control of the will.

In regard to the treatment he considers it essential in every case to determine the existence of the cause, and to take measures for its removal. In cases of long standing simple removal of the cause is not sufficient; a course of medicinal treatment must be pursued as well. The point of first importance is to look carefully after the general health. Tonics, more especially **Chalybeates**, should be administered. The one drug which seems to exert a special influence upon the disease is **Arsenic**, and it should be given in the same manner as in the treatment of chorea minor. It is seldom of value when given in small doses, but should be administered in gradually ascending doses until some toxic influence is observed. In some cases the arsenic acts better when given hypodermically.

Huntington's Chorea.—Collins³ reports an autopsy in a case of this disease. The dura was adherent, the diploë dense; the convolutions in the anterior pole of the brain were small; the entire encephalon weighed $43\frac{1}{2}$ ozs.; the average thickness of the gray matter was uniformly less than in the normal brain cortex.

Microscopical changes were not confined to the Rolandic region, but the process here was more advanced. There was a mottled, streaked appearance and cribriform state on cross section of the fresh brain, due to diminution in number and health of the ganglion cells, and to the increased perivascular and pericellular spaces and increased patency of the blood-vessels. The microscopical

changes were (1,) A decay or slowly progressive degeneration of the ganglion cells throughout the brain, especially of the two deepest layers. This cell death was particularly evident in the Rolandic region, very much less in the anterior pole, and incomparably less in the posterior pole; (2,) Increase of glia tissue, but not sufficiently prominent to constitute sclerosis, the conspicuous increase being about blood-vessels and ganglion cells; (3,) Enlargement of the pericellular spaces and distension of the perivascular spaces; (4,) Slightly diseased blood-vessels consisting in a proliferation of the nuclei of the adventitia and a thickening of the intima; (5,) Relative paucity of the medullated fibres of the cortex. He considered these changes indicated a chronic parenchymatous degeneration of the cortex.

REFERENCES.—¹ "Canad. Journ. of Med. and Surg.," March, 1897; ² "Amer. Journ. Med. Sci.," May, 1897; ³ "Med. Rec.," Nov. 20, 1897.

CHYLE CYSTS. (See "Abdominal Surgery.")

CONJUNCTIVA (Diseases of). *Wm. Oliver Moore, M.D., New York.*

Veasey² advises for burns of the conjunctiva by acids, the use of a lotion:—

R	Boric Acid	45 grs.		Distilled Water	℥iij
	Sod. Bicarb.	12 grs.			

To be dropped in the eye three times a day.

Also the employment of an ointment of **Dithymol Di-iodide**, 5 grains, **Purified Petroleum**, $\frac{1}{2}$ ounce, several times daily.

He also advises the passing of a small probe between the bulbar and tarsal conjunctiva daily to free forming adhesions.

Conjunctivitis.—Fuchs,² reports four cases of *mycotic conjunctivitis*, in which he found upon the conjunctiva, small points resembling the infraction of Weiborn, but which on closer examination, proved to be the mycotic colonies, resembling actinomycosis. The symptoms are those of a mild conjunctivitis. Simple **Curetting** was sufficient to remove the colonies.

Ophthalmia Neonatorum.—Purulent conjunctivitis and the other purulent forms have been treated by Valenti³ by means of **Airol**, which is an iodogallate of bismuth, used in either a powder or an ointment, the discharge in purulent conjunctivitis disappearing in three days. He has also used it in the *phlyctenular* forms.

Valude⁴ has published the results of the systematic employment of finely powdered **Iodoform** to the eyes of new-born babes; the results compare favourably with those obtained by Credé from silver nitrates. The iodoform is dusted into the conjunctival sac as soon as the child is born, the lids having first been cleansed, and before the cord has

been cut. The advantage claimed is that the powder or some of it, at least, remains in the folds of the conjunctiva for a considerable time after the application, whereas solutions immediately drain away.

In the hands of midwives it is more useful than silver nitrate, because it can be more easily applied. It does not decompose when kept in bottles as does silver nitrate.

Von Licherer⁵ recommends the use of **Oxycyanide of Mercury** in ophthalmia neonatorum, following out the suggestions of Schlosser, who showed that this drug presents antiseptic qualities equal to those of mercuric bichloride, and at the same time causing less irritation, and much less power of coagulating the albumin.

In ophthalmia neonatorum a solution of 1 in 500 has proved most effectual; the application is simple; the lids are everted and thoroughly cleansed by this solution, once daily.

In other acute affections of the conjunctiva 1 or 2 per cent. solutions are used.

Phlyctenular conjunctivitis is treated by Young,⁶ by the use of 1 in 1,000 aqueous solution of **Pyoktanin**, which is dissolved in water that has been thoroughly boiled. A fresh solution is prepared when any change in colour is noticed. The cases most helped had marked lachrymation and great congestion of the palpebral conjunctiva.

Germani⁷ finds that collyria containing from 1 to 3 per cent. of **Ichthyol** are very useful in this affection; and also in catarrhal conjunctivitis ichthyol is well borne, eases the pain, and hastens the cure.

Randall⁸ says rhinitis is one of the many causative factors in phlyctenular conjunctivitis, and that by the treatment of the nose, the eye symptoms will frequently disappear. The usual remedies for rhinitis are used with the happiest results.

Garey⁹ after several years' experience commends highly a 2 per cent. solution of **Antipyrin** in catarrhal and phlyctenular conjunctivitis; especially is it useful in relieving photophobia and smarting.

Granular conjunctivitis or *trachoma* is treated by Fernandez,¹⁰ of Havana, by injections of **Potassium Permanganate** into the fornix. They are attended by severe pain, which, however, can be modified by the previous instillation of a solution of cocaine. Eberson¹¹ says that he has found **Ichthyol** to be an excellent remedy in these affections, acting as an analgesic and vaso-constrictor, and to this he ascribes its excellent effects, as chronic vascular dilatation and hyperplasia of the conjunctiva are the chief characteristics of these diseases. He uses the following mixture:—

R	Ichthyol	5 parts	Glycerine	1 part
	Distilled Water	4 parts		

The everted lids are thickly painted, the mixture remaining on from sixty to ninety seconds, then washed off with clean water. It is indicated in every stage; in children a 30 per cent. solution may be used.

Elliott¹² favours the treatment by the **Actual Cautery** in cases where the granules are small, discrete, and easily recognizable; he uses a slender pointed steel cautery, two being used, one being heated while the other is in use. Cocaine anæsthesia is necessary; in children, ether.

Neznamoff¹³ paints the mucous membrane of the lids with a solution of pure **Iodine** mixed with liquid vaseline, twice daily. In four days improvement begins, and in twenty a cure is generally effected. In chronic cases use vaseline containing from a $\frac{1}{2}$ to 1 per cent. of iodine.

Diphtheritic Conjunctivitis.—From the report of Greef,¹⁴ in forty-two cases treated by himself and others by **Serum-therapy**, one had progressed so far toward recovery that the share of the treatment in producing the result was doubtful; two cases terminated fatally in spite of the serum-injections; but in thirty-seven the result was extremely favourable. As to the prevention of *post-diphtheritic paralysis* of the accommodation, this method of treatment seems to be without the least influence upon the course of diphtheritic paralysis of the ocular muscles.

Chatres¹⁵ draws the following conclusions from his elaborate studies :—

(1,) The microbes found in *purulent ophthalmia of the new born* are very numerous.

(2,) Calculation of percentages from cases observed shows that in 36 per cent. gonococci occur alone; in 12 per cent. micrococci are found; in 8 per cent. streptococci alone occur; in 4 per cent. streptococci are associated with Loeffler's bacilli; in 12 per cent. Loeffler's bacilli are found; in 4 per cent. streptococci are associated with undetermined bacilli; in 4 per cent. staphylococci occur alone; in 4 per cent. undetermined bacilli occur; in 4 per cent. the bacilli of Weeks are found; in 4 per cent. sarcinæ occur.

(3,) The gravest cases are those in which streptococci are found.

(4,) Purulent conjunctivitis, due to gonococcus only, is usually benign and yields readily to treatment.

(5,) Bacteriological examination at the beginning of the attack is important as to prognosis.

REFERENCES.—¹ "Phil. Polyclin.," Nov. 21, 1896; ² "Rev. gén. d'ophthal.," Nov. 10, 1896; ³ "Rif. med.," Dec. 12, 1896; ⁴ "Ind,

Lancet," Jan. 1, 1897 ; ⁵ "Clin. Journ.," Jan. 6, 1897 ; ⁶ "Journ. Amer. Med. Associ.," vol. xxvii. ; ⁷ "Gaz. degli Ospedali.," June 20, 1896 ; ⁸ "New York Med. Journ.," Dec. 12, 1896 ; ⁹ "Amer. Therap.," June, 1897 ; ¹⁰ "Amer. Med. and Surg. Bull.," March 19, 1897 ; ¹¹ "Therap. Monats.," p. 627 ; ¹² "Amer. Journ. Med. Sci.," April, 1897 ; ¹³ "New York Med. Rec.," Feb. 27, 1897 ; ¹⁴ "Deut. med. Woch.," No. 37, 1896 ; ¹⁵ "Arch. clin. de Bordeaux," No. 12, p. 570.

CONVULSIONS. (See "Pregnancy.")

CORNEA (Diseases of). *William Oliver Moore, M.D., New York.*

Interstitial Keratitis.—Jay ¹ reports a case of interstitial keratitis in acquired syphilis. There were hazy obscurations in several places in the left cornea, no iritis, nothing characteristic of inherited disease ; the patient had acquired syphilis three years before.

De Schweinitz ² in addition to the usual local treatment and constitutional remedies, insists upon the value of the same measures which are used with advantage in the treatment of patients with neurasthenia and depressed nutrition, namely, **Massage, Forced Feeding, Sponge Baths** and gentle **Faradization**. These cases always improve most rapidly when restricted from improper food, and when placed under hospital regulations and trained nursing.

Ulcers of the Cornea.—White ³ thinks the **Protective Bandage** should be generally adopted, but is contra-indicated where there is considerable conjunctival discharge, and in young children. After corneal perforation he would use the pressure bandage.

For superficial painful ulcers he uses a mydriatic, dissolved in vaseline or castor oil, rather than water ; the **Hydrochlorate of Scopolamine** is most satisfactory.

Extending ulcers he treats by the **Galvano-cautery**, cauterizing only the advancing margin of the ulcer, then filling the ulcer with finely divided **Iodoform** or **Iodol** ; scraping the ulcer, the dropping upon it of water heated to 150° F., and daily applications of **Carbolic Acid, Formalin**, or a saturated solution of **Mercuric Chloride**. He does not favour eserine. Hypodermic subconjunctival injections of **Common Salt**, 4 per cent. strength ; or, preferably, **Mercuric Bichloride Injections** ; the latter he uses not stronger than 1 to 4,000.

Veasey ⁴ has found topical applications of the tincture of **Iodine** of great service, especially in spreading ulcers. He first cures the ulcer, then wipes it out with a probe covered with absorbent cotton sterilized ; then the iodine is applied thoroughly and the excess is washed off with a solution of **Formaldehyde** (1 in 1,000), the latter being used as the collyrium during the treatment.

Pansier ⁵ has noticed the remarkable effect that the **Galvanic Cur-**

rent has in clearing up the resulting corneal opacities, while employing the current for its sedative action in ulcers of the cornea.

A current of 4 or 5 milliampères was applied daily for twenty minutes, the positive electrode on the neck, the negative on the eyelid; this is continued until the ulcer is healed or till the scar tissue has become sufficiently transparent.

REFERENCES.—¹ "Clin. Journ.," Jan. 12, 1897; ² "Phil. Polyclin.," April 24, 1897; ³ "Birming. Med. Rev.," vol. xxix., No. 1; ⁴ "Phil. Polyclin.," Oct. 31, 1896; ⁵ "Ann. d'ocul.," Dec. 1896.

CORYZA.

R. Lake, F.R.C.S.

Singer¹ recommends the following treatment for acute nasal catarrh. (1.) Vapours: Either **Terebene**, and a 2 to 5 per cent. alcoholic solution of **Menthol**. The vapour is *blown* into the nose. (2.) Powders: $\mathcal{R}$ **Camphoræ**, **Ac. Tannici** āā 2 grns.; **Sacch. Lac.** 4 grns.; or, $\mathcal{R}$ **Cocaine Mur.** 2 grns., **Menthol** 1, **Sacch. Lac.** 30. To be *blown* into the nose. (3.) Avoid douches and syringes; a spray of **Hydrogen Peroxide** and **Water**, equal parts, is very effective. Constitutional treatment must be attended to also.

REFERENCE.—¹ "Therap. Monats.," May, 1897.

F. de Havilland Hall, M.D., F.R.C.P.

Though no definite bacillus has been found uniformly associated with coryza, there is much in favour of the view that the affection of the upper respiratory tract to which the name coryza is applied is due to the penetration of micro-organisms into this region. Consequently, if the nose, naso-pharynx, mouth and pharynx are kept in a condition of asepsis we should be able, theoretically, to avoid colds. This M. Lemoine¹ attempts to do by directing the mouth to be washed out with the following solution:—

$\mathcal{R}$ Thymol	gr. 8	Water	pint 1
Alcohol	gr. 300	M.	

The nose and naso-pharynx are disinfected by spraying with the following solution for a few minutes at a time:—

$\mathcal{R}$ Salol	gr. 8	Distilled Water	3xvj
Sodium Chloride	gr. 45	M.	

The teeth should be carefully brushed and the fingers should not be allowed to touch the nose. During the day a few pastilles containing **Menthol** may be dissolved in the mouth. According to M. Lemoine, if these precautions are taken colds may be prevented during the winter and spring months. If a cold is to be arrested it must be done at the very commencement, *i.e.*, during the period in which there is a

slight feeling of depression with a disagreeable sensation in the region of the trachea and some obstruction of the nose.

For this purpose M. Lemoyez² recommends that 10 drops of the following mixture should be placed upon a sheet of rolled bibulous paper and the vapours be inhaled in much the same way that a cigarette is smoked. The formula is :—

℞ Pure Carbolic Acid		Alcohol (90 per cent.)	℥ijss
Pure Aqua Ammonia	āā ℥75	Distilled Water	℥iv

In most cases, however, the following powder for abortive purposes is better. It must be very finely pulverized :—

℞ Hydrochl. of Cocaine	gr. 7	Salol	gr. 75
Menthol	gr. 4	Boric Acid	℥ss

A small pinch should be drawn up into the nose every hour.

Should the attack be severe, so that this abortive treatment is likely to fail, it is well to administer a purgative with the purpose of withdrawing congestion from the head, and to produce abundant perspiration by the use of **Hot Alcoholic Beverages, Liquor Ammonii Acetatis, or Dover's Powder** in doses of 5 to 10 grains. Should the permeability of the nasal cavities be obstructed, it may be well every two to five hours to use a spray, with an atomizer, of a **Hot Solution of Cocaine** in the proportion of 1 per cent. ; or the following powder, which is antiseptic, may be employed :—

℞ Hydrochl. of Cocaine	gr. 7	Salicylated Bismuth,	
Menthol	gr. 3½	Sugar of Milk	āā gr. 75

Should there be reason to fear cocaine intoxication, mentholated sweet oil may be used instead in an atomizer as follows :—

℞ Menthol	gr. 15	Olive Oil	℥v
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For the purpose of overcoming any trigeminal neuralgia, and also for the support of the system, a cachet as below may be given three times a day, after meals :—

℞ Hydrochl. of Quinine	gr. 4	Antipyrin	gr. 7
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For the purpose of preventing reddening and excoriation of the nares, they should be anointed with borated vaseline.

In regard to the prophylactic treatment of coryza in persons who are exceedingly susceptible to attacks, it is well to remember that any intemperance in relation to alcoholic beverages increases the susceptibility to coryza, and that chronic lesions in the nose should be removed, as they maintain a tendency toward acute inflammation. Particularly is this true of adenoid vegetations in children and hypertrophic rhinitis in adults.

Dr. Georg Rosenfeld³ recommends that the nose should be

thoroughly swabbed with a 4 per cent. solution of **Nitrate of Silver** three times within an hour. After from three to twenty hours he repeats the application. This procedure is said to be rather painful, but extraordinarily efficacious. The addition of nitrate of cocaine to the solution would much diminish the pain.

REFERENCES.—¹“New York Med. Journ.,” Mar. 13, 1897; ²“Therap. Gaz.,” Feb. 15, 1897; ³“New York Med. Journ.,” Dec. 5, 1896.

COUGH.

F. de Havilland Hall, M.D., F.R.C.P.

TREATMENT.—In treating coughs it must be remembered that there are certain varieties of useless cough, *i.e.*, cough depending on reflex irritation, which comes on without the usual antecedents of acute disease, is not associated with the physical signs of pulmonary disease, and is of a dry, harsh character. As examples of this kind of cough, may be mentioned cough due to the presence of adenoids and enlarged tonsils, to granular pharyngitis, to enlargement of the lingual tonsil, to pharyngo-mycosis, etc. In all these cases local treatment is the only thing which is likely to give permanent relief. I have seen numerous cases of cough, which has persisted for months, being immediately relieved by cauterizing the small growths met with in granular pharyngitis.

In addition to irritation in the upper air passages, cough is sometimes the expression of reflex irritation starting from a more remote organ, as for instance the ear, the stomach, the uterus, etc. Under these circumstances the cough is usually laryngeal in character, and local applications, inhalations or sprays are for the most part useless. The **Bromides** and the various preparations of **Valerian** are usually of great value in these cases. Occasionally, however, in place of nerve sedatives, nervous stimulants give good results, and full doses of **Strychnine** may be ordered. In obstinate cases I have found a short sea voyage prove efficacious after all other remedies have failed.

Dr. Beverly Robinson¹ points out that there are “individuals apparently in good health who are constantly hawking, coughing, and expectorating. Usually these patients are very gouty; they may have a congested pharynx and a long uvula. The **Salicylate of Sodium** and **Lithium Salts** are the best remedies for this state.” In cough dependent on laryngitis, the avoidance of talking, the use of inhalations of **Cocaine**, **Benzoin**, or sprays containing 10 per cent. **Menthol** in fluid paraffin are to be recommended. In some cases nothing succeeds so well as a spray of a 5 per cent. solution of the **Hydrochlorate of Cocaine**. Counter-irritation over the upper part of

the sternum by means of a mustard leaf or a small blister will often give speedy relief. A simple, sedative linctus, such as equal parts of **Oxymel of Squills**, **Compound Tincture of Camphor** and **Syrup of Tolu**, a teaspoonful for a dose, every three or four hours, may be given with benefit. The combination of **Bromide** and **Belladonna**, as in the following prescription, will often relieve a spasmodic cough² :—

℞ Potass. Bromid.	ʒj	Syrupi Tolu	ʒvj
Vini Ipecac.	ʒiiss	Aquæ ad	ʒiv
Tinct. Belladon.	ʒiiss		

One or two teaspoonfuls to be taken every three hours.

Dr. Walter M. Fleming³ says that in acute attacks of laryngeal or winter cough, tickling and irritability of larynx, **Antikamnia** and **Codeine** are exceedingly trustworthy. If the irritation or spasm prevails at night the patient should take a 5-grain tablet an hour before retiring and repeat it hourly until the irritation is allayed. After taking the second or third tablet the cough is usually under control, at least for that paroxysm and for the night. Should the irritation prevail in the morning or at midday, the same course of administration should be observed until subdued. In neuroses, such as neurasthenia, hemicrania, hysteria, neuralgia, in short, the multitude of nervous ailments, he doubts if there is another remedial agent so reliable, serviceable, and satisfactory, and this, without establishing an exaction, requirement, or habit in the system, as morphine does.

REFERENCES.—¹“Dublin Med. Journ.,” Dec. 1896; ²“Med. Rec.,” Mar. 13, 1897; ³“New York Med. Journ.,” Mar. 13, 1897.

CYCLING (Effects of in Women).

Theophilus Parvin, M.D., Philadelphia.

This subject is considered by Dr. H. Macnaughton Jones.¹ Riding a long distance, or with excessive speed, has impaired the health, causing general weakness, and in some cases anæmia has followed arrest of menstruation or dysmenorrhœa. Want of opportunity to empty the bladder, with consequent distension, may cause vesical irritability, incontinence of urine, and retroversion of the uterus. Prolonged pressure upon the external genitals may have an injurious effect. Cycling may have a bad influence upon women at the menopause, especially if the menstrual function is irregular. Posterior displacement of the uterus, or prolapse suggests great caution, even if it does not forbid riding. The anæmic girl, with functional hæmic bruit, should not ride, or at least only cautiously. The probability is that coccygodynia may be caused by riding. Hæmorrhoids forbid riding. A saddle with a falcon pommel may prove a serious source of sexual excitement, and cause tenderness and considerable irritation.

"Cycling practised within moderation, is a most healthful recreation, and exhilarating exercise, attended with many desirable physiological effects on the woman, both mental and physical."

It may be added, we have yet much to learn as to the good and the evil connected with cycling by women, as it relates to the physical and the moral.

The subject of cycling by women is also considered by Theilhaber,² who recommends it in amenorrhœa, especially if the uterus is undeveloped. It is useful in nervous dysmenorrhœa; flexions and versions do not contra-indicate it, but fibroids, ovarian tumours, pregnancy, chronic and acute gonorrhœa, and also subacute and chronic peritonitis, and salpingitis do contra-indicate. Disorders of the bladder are usually made worse by cycling, but opinions differ. In general the author approves of this exercise when not used to excess.

REFERENCES.—¹"Med. Press and Circ.," Nov. 4, 1896; ²"Amer. Journ. of Med. Sci.," No. 48, 1895.

CYSTITIS.

Synopsis.—(Vol. 1897, pp. 21, 90 and 135.) Antinosine, less than $\frac{1}{2}$ % solution for irrigation. Urotropine, $7\frac{1}{2}$ to 22 grains daily in watery solution, hinders ammoniacal decomposition. Guaiacol Carbonate, 20% solution in Olive Oil allays pain, frequency of micturition, etc., in chronic cases; 1 to 2 grains are injected daily, and Iodoform, 1%, added increases its efficacy.

DELIRIUM TREMENS. *Græme M. Hammond, M.D., New York.*

Dr. Cottan¹ reports a case of delirium tremens in a chronic inebriate which promptly yielded to large doses of **Chloride of Ammonium**. He administered a drachm of the drug in one dose. This was promptly vomited. After a short time another similar dose was given. In fifteen minutes the hallucinations of snakes and lizards had disappeared and he had become quite rational. In forty minutes he was asleep, and it was not thought necessary to continue the administration of the drug.

Gossett² reports another case in which he gave a $\frac{1}{2}$ -drachm of chloride of ammonium in 4 ozs. of water. In fifteen minutes the patient was quieter; fifteen minutes later the dose was repeated; in a short time the patient was asleep and had no further trouble.

REFERENCES.—¹"New York Med. Journ.," Nov. 21, 1896; ²*Ibid.*, Jan. 15, 1897.

DERMATITIS (due to the X-Rays).

T. Colcott Fox, M.B.

Those interested in this subject will find an interesting paper by Gilchrist,¹ who tabulated the cases up to date. The eruptions of the skin present many points of similarity, and differ chiefly in severity,

according to either the length of time and frequency of exposure to the rays or to the idiosyncrasy of the patient.

The lesions may appear after a single exposure of forty to sixty minutes, or after two, three or more exposures, or only after repeated and prolonged sittings. It is curious that as much as nine days may elapse before the eruption develops. The trunk appears to suffer most severely, but the pains are less there than on the hands. The majority of observers describe a peculiar redness or erythema at first, then swelling of the derma, followed by a deep discoloration of the skin until it becomes quite a dark brown colour. Exfoliation follows. In a number of cases there was vesiculation, and the lesions may be quite serious (sloughing, etc.). Other lesions were alopecia, loss of finger nails, and *obs. inate ulceration*. Gilchrist himself records a case in which the bones of the hands became thickened. Oudin, Barthélemy, and Darier² have met with fifty cases of skin affection following the application of the X-rays.

REFERENCES.—¹“Johns Hopkins Hosp. Bull.,” Feb. 1897; ²quoted “Brit. Med. Journ.,” Sept. 25, 1897.

DERMOID CYSTS. (See “Abdominal Surgery.”)

DIABETES INSIPIDUS. *Prof. R. Saundby, M.D., F.R.C.P.*

H. Brackmann¹ had occasion to prescribe **Amylene Hydrate** for a young man mentally unbalanced, who had been affected with polyuria from infancy; 2·50 grammes were given every evening, and under its influence the amount of urine fell from 7 to 2 litres a day, and the polydipsia ceased. These troubles returned as soon as the amylen hydrate was stopped, and ceased again when it was resumed. After a certain length of time permanent improvement was secured, so that the amount of urine never surpassed 5 litres a day, even without the medication. He therefore recommends the further use of this substance in diabetes insipidus.

REFERENCE.—¹“Clin. Journ.,” March 10, 1897.

DIABETES MELLITUS. *Prof. R. Saundby, M.D., F.R.C.P.*

It is essential that there should be a reform in the dietetic treatment of diabetes. As generally conducted it is an unscientific, blind routine, modified by the patient's indocility, caprice, or deceit. Many cases are put on strict diet without need, and others have too much latitude allowed them. There is no governing principle. A firm doctor prescribes strict diet, an easy-going one allows relaxations; a docile patient obeys the rule, a rebellious or deceitful one openly or covertly disregards it. In each case an effort should be made to determine the capacity for carbohydrate metabolism, and for this

purpose it is a great advantage to take the patient into a hospital or home where the effects of diet can be accurately tested, and the quantity and character of the carbohydrate to be allowed defined with precision.

In order to estimate the carbohydrate metabolism the patient should be kept on strict diet for seven days. At the end of this time if sugar is still present the case is a severe one. If the sugar has disappeared carbohydrates, *e.g.*, milk, potatoes, and bread, should be cautiously added in small definite quantities, so as to afford a fairly mixed and tolerable diet. Should sugar reappear the quantity last added must be reduced slightly. In severe cases also some carbohydrate should be added and its effect noted. Many patients can take milk, lævulose and potatoes in small quantities with advantage, and with only slight increase in the amount of sugar; bread is less frequently tolerated.

It must be remembered that many of the diabetic foods contain a considerable percentage of starch, and should be used with caution. Others are indigestible and unpalatable. Callard's brown loaf is the best substitute for bread, if we consider its relative freedom from carbohydrate (6.75 per cent.), and its palatability. No gluten bread contains less than 24 per cent. of starch. Starchless biscuits from the same maker are free from carbohydrate, but are too hard for the bad teeth and tender gums of many diabetics. The value of potatoes in the form of one large baked potato with each meal, needs to be insisted upon, as such an addition to the diet often makes it possible to do without any bread or bread substitute; but in this as in all other cases the effect must be watched and individual idiosyncrasies must be expected, some persons tolerating starch in this form better than others.

The use of alcohol in diabetes demands to be carefully considered. It should be forbidden where albuminuria is present, and is seldom necessary. The opinion that it replaces the want of sugar and starch is erroneous, and it can only be regarded in diabetes, as elsewhere, as a stimulant to the heart and to the muscular wall of the stomach. As many patients take food better when allowed a little alcohol, too rigid a rule of abstinence need not be enjoined; but it is better to prescribe light wines free from sugar, such as hock or Bordeaux claret in preference to whiskey, although the latter may be permitted under suitable restrictions as to quantity.

Is there such a thing as Renal Diabetes? It is strange to think that after all we may have to revert to the old doctrine of the renal origin of diabetes in order to explain, at least, some of the cases of persistent

glycosuria. The idea has been suggested by the researches of von Mering upon the glycosuria caused by the administration of the glucoside, phloridzin. According to this observer the glycosuria so caused is unaccompanied by hyperglycæmia, and although Pavy finds fault with his chemical methods and disputes his conclusions, they are generally accepted. Assuming for the moment that they are correct, it would appear that the occurrence of the glycosuria depends upon the excretion of the normal sugar of the blood by the renal epithelium. Klemperer supports this by adducing the fact that phloridzin fails to cause glycosuria when the renal epithelium has undergone extensive destruction, but Levy denies this. Up to the present time, it cannot be said that any example of true renal diabetes has been described, and the most that can be admitted is that the experiments of von Mering suggest its possibility.

There is no doubt that diabetes must be regarded as one of the penalties of advanced civilization. The statistics of the disease show that it is steadily and rapidly increasing in all the great cities of Europe. Among the most recent investigations as to the prevalence of this special malady, it has been shown that locomotive drivers have displayed a marked mortality from diabetes. An American observer has stated that this mortality has reached as much as seven times that of the ordinary population. The causes of this are stated to be : (1,) The jarring to which the drivers are exposed ; (2,) The mental strain under which they work ; (3,) The changes of temperature which they have to endure. In this country Dr. Saundby has found that the records of one large railway company show that the mortality of engine-drivers from diabetes, so far as it is possible to compare them with the general population about the same age, is somewhat excessive. The subject is one which would be well worth a close and extensive inquiry. There is much yet concerning the pathology and etiology of diabetes which is obscure.

Dr. C. H. Bond¹ has shown that out of three hundred and fifty-five recent cases examined 5·35 per cent. had sugar in the urine on admission to Banstead Asylum. Cases of glycosuria far exceed cases of true diabetes ; only two of the three hundred and fifty-five suffered from the latter, while apparently about 5 per cent. of all recent cases of insanity might be expected to show glycosuria. By the administration of **Uranium Nitrate** the excretion of sugar in the urine could be entirely stopped, and thus the question of the dependence of mental symptoms upon glycosuria could be studied. He concludes that the saccharine urines met with among the insane occurred in two main groups, those of true diabetes and those of glycosuria. The former

embraced instances where the disease developed during the progress of the mental malady and could in no way be said to cause it, and also included cases where the insanity might be considered as caused by the diabetes, the treatment of which by nitrate of uranium appeared to be very encouraging. Glycosuria in association with insanity might be persistent, or intermittent, or remittent. The majority of cases suffered from melancholia. Maniacal patients, epileptics, and congenital cases were apparently exempt. In many there was a distinct history of alcoholic intemperance, and traumatism in a few cases. In some glycosuria disappeared *fari passu* with mental symptoms. But freeing the urine of sugar by uranium nitrate in this class of cases seemed unattended by beneficial results mentally.

TREATMENT.—Mousse,² of Toulouse, has tried antipyrin with the object of diminishing the amount of sugar, uric acid, and urea, but the diminution was only fleeting. He had come to the conclusion that antipyrin should not be prescribed for diabetes. Beer yeast was of no use in his hands. He has tried pancreas in the fresh state in daily doses of 30 grammes, but with no better success. In his opinion the corner-stone of treatment in diabetes is **Diet**; if drugs are used, their effect should be closely watched, as they are not infrequently hurtful.

In discussing this communication, Spillmann said he had treated two cases of wasting diabetes with injections of pancreatic juice. Each time the injections were given the sugar diminished and the weight remained stationary. Mousse admitted that each time he had given pancreas it had seemed to him that loss of weight was retarded.

Josias³ points out that while true diabetes is rare in children it is nevertheless a grave disease when it occurs, and is usually accompanied by an extraordinary degree of wasting. Neither can it be treated by the use of opiates in the manner in which we treat diabetes in adults. As far as possible, however, a diet composed of meats and gluten bread should be used. To take the place of the sugar which we must necessarily deprive the patient of, glycerin and saccharin may be combined with some alkaline substance and used in place of lump sugar. Violent physical exercise and severe mental effort are to be strictly interdicted, but tonics such as **Cod-liver Oil** in large doses and **Cinchona** are indicated. **Arsenic** is a remedy of particular value given in full doses; well diluted, if Fowler's solution is used. As drugs to diminish the quantity of sugar by their nervine influence we may employ:—

R. Antipyrin	ʒiij		Water	ʒviij
Glycerin	ʒj			

Sig.—1 or 2 tablespoonfuls of this to be given each day.

Another preparation which is of value in some cases has been recommended by Legendre :—

℞ Sulphate of Strychnine	1-200 gr.	Valerianate of Quinine	1 gr.
Arseniate of Sodium	1-50 gr.	Extract of Valerian, q.s., to	
Pure Codeine	1-6 gr.	make 1 pill	

Sig.—From 1 to 6 of these pills may be given each day.

Sometimes the **Salicylate of Sodium** in moderate doses does good in these cases ; in other instances **Ergot** is of value.

Detection of Sugar.—Dr. R. T. Williamson⁴ has referred to the difficulty of detecting with certainty small quantities of sugar in the urine. Every test had some weak point, but by the following combination of tests a definite conclusion could be arrived at easily : (1,) Apply Fehling's test ; if no oxide of copper be reduced, or if there be a good reduction and other indications of diabetes be present, no further test is required. In some cases other indications of diabetes are absent or the reduction of copper is slight. In such cases (2,) try the phenyl-hydrazin test, simplified method. (Test tube filled for half an inch with powdered sodium acetate, for half an inch with phenyl hydrazin hydrochlorate in powder, and the tube half filled with urine ; keep boiling over a lamp for two minutes.) A negative result shows that the substance reducing Fehling's solution is not sugar, and no further test is required. A positive result (deposit which under the microscope consists of yellow needle-shaped crystals in sheaves) indicates glucose ; if scanty, possibly glycuronic acid. Lactose yields small yellow globules with very short spines ; (3,) Try the fermentation test for twenty-four hours, using two tubes, one containing the suspected urine, the other normal urine for control ; yeast equals one-tenth by volume. Excess of gas in the former tube indicates glucose ; a negative result shows glucose to be absent, or less than 0.1 per cent. If the result be negative at the end of twenty-four hours (4,) apply Fehling's test to the mixed urine and yeast. If Fehling's solution be no longer reduced, glucose which had been destroyed by the yeast is indicated ; if Fehling's solution is still reduced, the reducing substance is not glucose.

B. A. Van Kettel⁵ gives the following : 4 c.c. of liquid phenol and 10 c.c. of a 10 per cent. aqueous solution of lead acetate are added to 50 c.c. of urine ; the mixture is shaken, filtered, the filtrate and washings made up to 100 c.c. and examined by the polarimeter. If the lead be removed minute quantities can be estimated by Fehling's solutions.

For greater certainty gluco-sazone crystals can be formed by treating the lead free solution with phenyl-hydrazin and acetic acid. The

method is speedy, accurate, can be carried out at the ordinary temperature, and, if the reagents are added while the urine is fresh, the estimation can be postponed for any convenient period.

Czolas⁶ states that the urine of persons who have partaken of asparagus gives a reaction with Fehling's solution, but no glucose is present. It is probable that a glucoid is present.

REFERENCES.—¹"Lancet," Dec. 5, 1896; ²"Sem. méd.," Aug. 19, 1897; ³"Journ. de Praticiens," Aug. 6, 1896; ⁴"Brit. Med. Journ.," March 9, 1897; ⁵"Zeit. Physiol. Chem.," 1896, xxii, p. 278; ⁶"Analyst," Dec. 1896.

DIARRHŒA AND INDIGESTION (In Children).

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Dr. A Baginsky¹ finds three forms of bacteria in the summer diarrhœa of infants: bacteria coli, bacteria lactis, and a proteus variety. These bacteria are common residents of the intestinal canal, and under the influence of a high temperature, and possibly other agencies yet unknown, they acquire virulent power. The products of these bacteria, ammoniacal in their nature, cause inflammatory disturbances which, in turn, bring about degeneration of the mucous membrane of the intestinal wall and allow the germs to enter the blood and lymphatics, and through these other viscera.

Dr. Chas. G. Cumston² has made a study of the virulence of the bacterium coli in infantile diarrhœa, with the following conclusions:—

(1.) The bacterium coli appears to be the pathogenic agent of the greater number of summer infantile diarrhœas.

(2.) This organism is the more often associated with the streptococcus pyogenes.

(3.) The virulence, more considerable than in the intestine of a healthy child, is almost always in direct relation to the condition of the child at the time the culture is taken, and does not appear to be proportional to the ulterior gravity of the case.

(4.) The mobility of the bacterium coli is in general proportional to its virulence. The jumping movement, nevertheless, does not correspond to an exalted virulence in comparison with the cases in which the mobility was very considerable without presenting these jumping movements.

(5.) The virulence of the bacterium coli found in the blood and other organs is identical to that of the bacterium coli taken from the intestine of the same individual.

Drs. M. Barbier and M. Deroyer³ have used **Sterilized Salt Water** subcutaneously injected in the intestinal affections of nurslings. The serum employed consisted of a 7 per mille salt solution (7 gm. to

1000 of water). The injections were made in the lateral region of the abdomen. The doses varied somewhat, but never beyond 30 c.c. in twenty-four hours, 15 c.c. being administered in the morning and 15 at night.

The indications for the employment of these injections were as follows : (1,) In acute infection enteritis with hypothermia, which did not expressly indicate, in consequence of an excessive diarrhœa, large injections of salt solutions ; (2,) In chronic enteritis which presented the same characteristics of hypothermia, with progressive weakness. In the opinion of the authors, these injections were not indicated in the febrile forms, in which it was not necessary to increase the temperature or the acceleration of the pulse. But they were called for, when, during the course of a febrile diarrhœa, a period of hypothermia or collapse supervened.

Dr. Watu⁴ advises the treatment of infantile diarrhœa by a regimen of boiled water, cooled to a suitable temperature, and given in small quantities every hour or half hour, to the exclusion of all food, for eight, twelve, or twenty-four hours. This dilutes the irritating secretions, dislodges the *débris* of decomposing alimentary matter and eliminates the poison from the system.

Dr. Thiercelin⁵ recommends the use of **Enteroclysis**. He believes that it is indicated in cases of obstruction of the bowels and in cases in which fermenting materials have been retained in the intestine, whether this condition be acute or chronic, although he believes that it is particularly useful in the chronic cases. By the use of enteroclysis, under these circumstances, the fermenting material is removed and the poison which is formed thereby is washed out of the bowel. Should fever accompany the infectious process cold water may be employed for the injections, using as large a quantity as one or two quarts. These copious irrigations of the bowel are one of our best aids for the relief of the hyperpyrexia which seems to menace the child, and speedily cause a fall of temperature amounting to 2° to 3°. On the contrary, should the affection be accompanied by collapse and a fall of temperature, the employment of water at a temperature of 100° to 102° or 102°·5 is generally useful in raising the temperature of the patient to the normal.

The liquid, which is employed in different morbid states, consists of water which has been carefully sterilized by boiling and to which common salt has been added in the proportion of 100 grains to the quart of water. Should there be present a follicular enteritis it is well to use a decoction of marshmallow root.

Dr. Soliner⁶ advises **Tannalbin** in the treatment of acute and

chronic enteritis in children. The dose ranges from 0·1 gm. for a ten months' child, to 0·3 gm. in a child three years old. Cases were affected in from three to nine days. Tannalbin is indicated wherever catarrhal affections of the intestines exist, and exerts its antiseptic and astringent properties even to the lowest portions of the large intestines.

Dr. E. Kraus⁷ has treated twenty-two cases of gastro-intestinal disease almost entirely with the use of **Tannigen**. The dose varied from 0·1 to 0·3 gm., four times daily. It is advisable to continue the use of the remedy in diminished doses for a few days after the disappearance of the symptoms, in order to prevent recurrences.

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DIPHThERIA.

R. Lake, F.R.C.S.

DIAGNOSIS AND PROGNOSIS.—The diagnosis between diphtheria and pneumococcic anginas are said by Jaccoud¹ to be differentiated by the following points before a bacteriological examination can be made.

The onset of the pneumococcic variety is very violent—rigor, severe pain, glandular enlargement, and temperature of at least 103° Fahr.; exudation, if present, greyish white in colour, and adherent; if absent, the mucosa is glazed and red, defervescence is sudden and occurs on the fourth day. Thus the attack, though severe, is benign.

Rogers and Josué² prove that the bone-marrow produces leucocytosis, and that in this disease the proliferation of cells is due both to the toxin and antitoxin, though the histological appearances vary in each, and also differ from those of suppuration. In the toxin experiments the large and medium-sized cells proliferate; in antitoxin experiments the proliferation occurs chiefly in the small cells. Engel,³ as the result of careful study of the blood in this complaint with regard to prognosis, says: "If the myelocytes—*i.e.*, mono-nuclear white blood corpuscles, with neutrophile granules (excluding both the mono-nuclear leucocytes poor in chromatin, considered by Fränkel as characteristic of leucæmia, and also the larger mono-nuclear eosinophile cells of Müller and Rieder)—are present in quantities of 2 per cent. the patient will die, but a smaller percentage does not of itself justify a favourable prognosis. The highest percentage in those who recovered was 1·3 to 1·5 in the height of the illness, sinking shortly to ·1 and ·7, and the maximum in the fatal cases was 16·4 per cent.

TREATMENT.—It is in the ordinary course of events that the past year has seen not only an enormous mass of literature relative to the antitoxin treatment of this disease, but also the improvement of the **Antitoxin** of the various serums in the market. It has also brought out one or two adverse criticisms. Of these, one by Browne⁴ is a fair example.

Antitoxin. (See also "Antitoxin," p. 170).—Sidney Martin⁵ describes the method of producing the serum at the end of 1896. He says: It (the toxin) was produced artificially by growing the bacillus in broth, containing 1 to 2 per cent. of peptone. After the bacillus had been grown in this for about a month, it was filtered off; this contained the toxin which, after passing through the blood of the horse, forms antitoxin. As each serum contains a certain percentage of antitoxin, but not a constant one, the following method is used to test and express any sample in normal units; a so-called normal unit being ten times the amount of antitoxin which is necessary to neutralize a given quantity of toxin (ten times a lethal dose) within forty-eight hours, in a guinea-pig of from 250 to 300 grammes body-weight. From this it will be obvious that the more concentrated the serum the less bulk of the fluid injected. Thus Behring's serum contains 5,000 units to the gramme (15½ minims). This serum is dried, and easily soluble. G. E. C. Wood⁶ proposes to get a more potent serum by estimating the relative proportion of normal units in the blood of each horse which was injected, after a stated time, and casting those whose antitoxin-forming powers were not up to a given standard, as this power may vary from 1,000 to 50 normal units per c.c.

Blumenthal⁷ has proved that a peptone-bouillon which contained 1 per cent. of sugar was incapable of forming toxins; by this means a peptone-bouillon can be made in which the Klebs-Loeffler bacillus will grow readily, but which will not be found to contain toxins.

Unfortunately we are obliged to admit that the serums in the markets are by no means always either what they profess to be, nor are all samples of the same brand always of equal strength.⁸ The "Medical News," in a report issued by them, to take a few examples, one claiming 1,500 normal units, possessed 3,465; another claiming 1,000, had only 647.5; and A. J. Turner and L. N. Ashworth⁹ said the antitoxin of the British Institute of Preventive Medicine appears not to have a constant strength.

In America, especially, we receive encouraging accounts of the way the profession appreciate this remedy, as in the Report issued by the American Pediatric Society, over six hundred physicians out of six

hundred and thirteen expressed themselves in favour of the method,¹ and the total percentage mortality on three thousand three hundred and eighty-four cases injected was 12·3. Also the statement is made that the nervous system reacts less than any other part, the percentage of paralysis being 9·7. The dose for patients with laryngeal stenosis should be larger than in others—for a child over two years 1,500 to 2,000 as an initial dose. Detwiler¹¹ gives 1,000 units as sufficient for an average case. A. D'Agnanno¹² ascribes the different percentages given by various observers to : (1,) The period of the disease at which the injection is practised ; (2,) The quantity of sérum used ; (3,) Local treatment ; (4,) The varying proportion of faucial and laryngeal cases. But he omits a very important point, that of numbers, for to get a percentage which will be practically correct, we need at least thirty three thousand cases. Martin¹³ gives 4,000 to 8,000 units as a dose, and is satisfied this is a better plan than the small doses quoted before.

Antitoxin (other effects of).—The most common ill-effect of this remedy is an exanthematous rash. Hartung¹⁴ divides these into : (1,) Serum urticaria ; (2,) Diffuse serum exantheims ; (3,) Scarlatinal-like rashes ; (4,) Macula exantheims (measles, etc.) ; (5,) Polymorphous serous exantheims. Bothwick and Irwin¹⁵ saw eight cases of this trouble in twenty-five, and it usually lasts about nine days ; in seven it was urticarial, and in one scarlatinal. Behring¹⁶ hopes to reduce all the unpleasant effects by the use of the new serum previously alluded to. Whilst there are still occasional lethal effects recorded, they are more probably due to an idiosyncrasy than to any unusual toxin in the serum. Cuno¹⁷ says, in the cases of acute nephritis, there was no evidence to show that there existed any direct connection between it and the injection. Goodall¹⁸ reports three cases of nephritis complicating diphtheria, treated with antitoxin, all recovering, and in two of the cases the nephritis existed previously to the injections, and in the third it reappeared, and this may have been due to the effect of the serum acting on the affected organ. He also says he has once seen hæmaturia after a serum injection.

Immunization.—B. R. Shurley¹⁹ has collected over twenty-six thousand instances of this application of antitoxin, and gives the following dosage to age : one to three months, 50 units ; three to four months, 75 units ; four to six months, 100 units ; six months to one year, 150 units ; one to two years, 175 units ; two to four years, 200 units ; adults, 400 units ; and he adds this summary, which is a good one, of our present knowledge : (1,) Previous prophylactic measures have failed ; (2,) Immunity after diphtheria cannot be

increased by antitoxin; (3,) Immunity is immediate; (4,) Fresh serum immunizes for thirteen days; (5,) Injections to be omitted in serious illnesses; (6,) Reaction is slight. Thomas²⁰ protected three hundred and twenty-six children; urticaria, œdema, pyrexia, and slight diarrhœa were the most serious complications; four of these children developed the disease.

Intubation.—All authorities now are inclined to favour the practice of this measure as a substitute for tracheotomy, since the introduction of the antitoxin treatment. Its advocates have nothing really new to add to what we have learnt in previous years, but the wonderful effect of the serum in loosening the membrane is so marked and the period necessary for the tube to be kept in the larynx is so short that an additional argument is obtained for intubation. In this connection, Rosenthal²¹ shows, by carefully worked out tables, that whereas previous to the introduction of the antitoxin treatment, the average duration for the tube to remain *in situ* was one hundred and eighty-five hours, and at the date of writing it was one hundred and fourteen hours, a reduction of no less than seventy-one hours.

Douglas²² says that this loosening of the membrane may act against the usefulness of intubation, for if the patient is already exhausted, it may be necessary to perform tracheotomy in preference to a further attempt with the tube, and he quotes two cases as examples of this condition.

Kellock²³ thus sums up the chief objection to intubation: The formation of pressure ulcers, the inability to cough up the membrane. The air is infected by passing over diseased surfaces. The operation is difficult; the membrane may be pushed down, and the dangers in nursing serious. With regard to ulceration, whilst admitting its seriousness, he observes that the larger the tube, in moderation, the less the liability to ulceration, as the tube moves less. But in advocating intubation the writer oversteps the mark when he says it is usually necessary to keep the tracheotomy patient in a tent-bed with an atmosphere warmed and moistened by steam.

In this connection Caliatti²⁴ gives a very interesting account of two cases of ulceration and subsequent stenosis, but also draws attention to the probability of this being due more to the disease than the tube, for he points out most justly that, in many specific fevers, ulcers of the larynx occur and stenosis follows when no tubes have been passed; notably we may quote enteric fever as affording examples of this. A notable symptom in stenosis is the frequent auto-extubation. For treatment he suggests either gradual dilatation or laryngotomy. The treatment of complete stenosis scarcely falls under this heading.

Trumpp²⁵ advises the following method of removing the tube, in children : Pressure with the thumb is made on the trachea below the cricoid, until the tube is felt. This causes cough, and the tube is ejected. Should this fail, the tube may be squeezed out by forcible pressure with both thumbs.

Drugs and local applications still find favour with a large number, and amongst those used for the first time, or again brought forward, we may notice the following : Bloch²⁶ gives 10 per cent. of **Citric Acid** every two hours in teaspoonful doses. Wickers²⁷ uses as an adjunct to treatment **Sodium Hyposulphite** in saturated solution ; as a local application, **Tincture of Myrrh**,²⁸ and **Atropine Sulph.**²⁹ ; whilst Solis Cohen³⁰ advocates **Guaiacol** 10, **Menthol** 1, **Ol. Olivæ** 10. He says if used early it not only checks the disease but seems to destroy the bacilli, and is also useful in tonsillitis. Flick³¹ is a strong upholder of **Calomel** in this disease ; he begins with gr. $\frac{1}{80}$ triturated with sugar, every fifteen minutes, the constitutional effect being watched and used to control the administration. Nasal insufflations may be added to the treatment. Its action is purely local. And *Intra-venous injections* of **Mercuric Chloride** are suggested by Ryle,³² to be carried out on the same lines as Baccelli's injection for syphilis. Binet³³ speaks of the use of **Resorcin** as a prophylactic in the form of a mouth and nose wash of $\frac{1}{2}$ per cent., and a teaspoonful of a 20 per cent. solution is given in water as an internal medicament.

Protiodide of Mercury has proved serviceable in the hands of Chapman,³⁴ both as a remedial and as a prophylactic measure ; it is used in a solution of 1 grain to 6 ounces of water, either as a sub-mucous injection, a deep tonsillar injection, or as a spray. **Peroxide of Hydrogen** is used by Moriarta³⁵ amongst others. As a topical application it may be used either at full strength or diluted. Luerdeckens³⁶ uses besides local applications to the diseased parts small doses of **Mercuric Cyanide**, a preparation first suggested, we believe, in Sweden.

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²³"Lancet," Oct. 3, 1896; ²⁴"Jahrbuch f. Kinderheil.," xliii., 1896; ²⁵"Münch. med. Woch.," April 28, 1896; ²⁶"Med. Rec.," Nov., 1896; ²⁷"Lancet," June 6, 1896; ²⁸"Münch. med. Woch.," Bd. 47, 1896; ²⁹"Therap. Monats.," Aug., 1896; ³⁰"Philade'phia Polyclin.," 1896; ³¹"Med. Surg. Rep.," June 10, 1896; ³²"Med. News," July 18, 1896; ³³"New York Med. Journ.," Dec. 16, 1896; ³⁴"Med. Rec.," Nov., 1896; ³⁵"New York Med. Journ.," Feb. 13, 1897; ³⁶"Therap. Monats.," No. 11, 1896.

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Dr. A. E. Bieser¹ considers the assertion that antitoxin is the best remedy for diphtheria, without specifying what kind of diphtheria, will do harm both to the new method and to the medical profession.

The best classification of diphtheria is the following:—

I.—*True Diphtheria*: (A,) Pure (where we find a pure culture of Klebs-Loeffler bacilli); (B,) Mixed (where we find other bacteria associated in great numbers with the Klebs-Loeffler bacillus in culture). These associations are: (a,) With small cocci (Brisson); (b,) With staphylococci pyogenes; (c,) With streptococci.

II.—*False Diphtheria*, including all croupous inflammations of throat, or larynx, in which the Klebs-Loeffler bacillus is neither present singly nor in association with any of the above varieties of bacteria.

In true diphtheria the bacilli are localized at the site of invasion. Rarely, if ever, are the bacilli found in the blood or viscera; it is the toxin which is discharged into the blood and lymphatics that causes the constitutional disturbances of true diphtheria. In pseudo-diphtheria, on the contrary, the germ itself gets into the blood and viscera, and the bad effect of the disease is due, not so much to a toxin poisoning, as to the presence of the bacteria. Of twenty-five cases of tonsillar and naso-pharyngeal diphtheria, without laryngeal involvement, treated without antitoxin, all recovered. He advises as follows: (1,) Inject antitoxin only in cases which you know to be true Klebs-Loeffler diphtheria; (2,) In doubtful cases, in cases where the bacteriological examination is negative, and in cases which clinical experience teaches you are likely to respond badly to antitoxin, avoid it; (3,) Do not inject antitoxin indiscriminately; in most cases no harm is done, but trouble may result, and false impressions given as to the value of antitoxin in the treatment of diphtheria.

Dr. Frank L. Morse² advances three cardinal points in the treatment of diphtheria: (1,) Antitoxin; (2,) Stimulation; (3,) Irrigation. Alcoholic stimulation, particularly in the form of brandy or whiskey, is of inestimable value. The ordinary dose of antitoxin for a child of from two to five years of age, with a moderate amount of membrane

on each tonsil, is 1000 units. This has been increased to 1500 units in a child five to ten years of age, and 2000 units in an adult, with the same proportionate amount of membrane. The repetition of the antitoxin is indicated in many cases, but is rarely repeated in the first twenty-four hours.

Dr. Kohts³ reports the conservative treatment of diphtheria at the Children's Clinic of Strasburg University. Neither the serum treatment nor intubation is employed. The diphtheritic exudate is removed without laceration of the tissue, and the germs are then destroyed at the site of operation. The membrane is removed by means of an application of a 10 per cent. **Papayotin Solution**. When the parts are clear, the air of the sick room is saturated with a spray of $7\frac{1}{2}$ per cent. **Sodium Chloride** in glycerine and water. **Ice** is applied locally, and pieces of ice are given the patient. The general management consists in over-feeding, in keeping the patient warm, and in giving as little internal medication as possible. Intubation is not practised because intubated children cannot be fed well. The results of the treatment are as follows: Among six hundred and fifty-eight cases observed between 1889 and 1893, the mortality varied between 19.7 per cent. and 26.6 per cent. Tracheotomy was performed upon three hundred and ninety-seven; of these the mortality in different years ranged between 25 and 50.4 per cent.

Dr. Rotch⁴ reports cases in which diphtheria has attacked the eye. The following conclusions are reached: (1,) In all cases of purulent conjunctivitis the diagnosis should rest upon the bacteriological examination and not upon the clinical appearances; (2,) Diphtheritic conjunctivitis may be present in localized areas without the conjunctivæ being affected as a whole; (3,) Ulcers of the cornea, with rapid necrosis of the corneal tissue, may be due to infection with the Klebs-Loeffler bacillus; (4,) Antitoxin affects favourably both the conjunctival disease and the corneal necrosis; (5,) An early bacteriological diagnosis is exceedingly important, as the cornea is generally safe, with a resulting preservation of vision, if antitoxin is used early.

Dr. Demetriades⁵ has made investigations upon the vitality of the Klebs-Loeffler bacillus in water—sterilized distilled water, sterilized spring water, and spring water unsterilized were used. In plain spring water the disappearance of the bacilli was most rapid. The experiments showed that the bacilli lost their virulence very rapidly while in the water, but as rapidly regained it when placed in favourable media.

Dr. Koplik⁶ reports a method by which a bacteriological diagnosis

PLATE I.



Intubation Tube in position in larynx (side view)—child 10 months old.

may be positively made in two and one half to three hours. The medium employed is the Loeffler sugar-blood serum, and the swab used in most cities now to make the clinical diagnosis. On this medium alone the bacilli thrive during the first few hours at a rate exceeding that of the other bacteria.

The *incubator* is the small water oven in use in all chemical laboratories for drying purposes—inside measurement four by five by six inches—just large enough to accommodate a small or large test tube with medium for culture. It must not be larger. This oven, supplied with a thermometer as in the cut (Fig. 9), is mounted on a tripod or retort stand. To prepare the oven for use, it is filled with water; the temperature of the internal chamber is rapidly raised with a Bunsen burner to 37° or 38° Celsius, which takes five minutes. As the temperature reaches 37° the flame is removed and replaced by the small kerosene lamp. A small flame in the lamp will keep the temperature of the inside chamber quite constant at 38° for hours. For three hours we need not watch closely, but for longer periods it may need occasional looking after. Having inoculated the serum tube in the manner now well-known, it is placed on the bottom of the inside chamber, the door closed, and not disturbed for two and one-half to three hours.

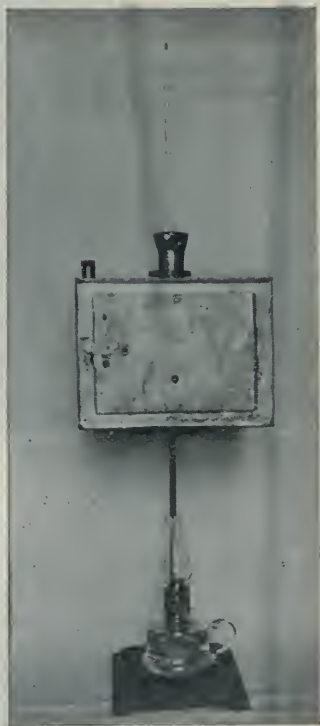


Fig. 9.—Incubator employed in making a rapid diagnosis of diphtheria.

It is then taken out, and the surface carefully scraped with the platinum hook used for this purpose; the cover-glass is prepared in the regular way and stained with blue of Loeffler. At the end of two and one half to three hours the growth of colonies can be distinguished on the surface of the serum with a magnifying glass; at the end of four hours with the naked eye. It is useless, and indeed, harmful to wait longer. At the end of five hours the growth is very palpable.

The scraping of the surface of the serum with the sterilized platinum hook should include the whole surface of the serum, and should be done in a longitudinal direction. No attempt, of course, is made to pick out colonies.

Dr. Wm. R. Stokes⁷ gives the results of a bacteriological examination of nine autopsies in cases of diphtheria. In five cases the streptococcus was found in the liver, spleen, kidney and the blood of the heart; in one case in the kidney and blood of the heart; and in one case in the spleen. The pneumococcus (*micrococcus lanceolatus*), was found only infrequently, it being observed in two cases in the kidney, in one of which the streptococcus was also found in the spleen. In the cultures from one case the only organism present was the bacillus coli communis. In the lungs of all these cases were found the bacillus diphtheriæ, streptococci, pneumococci, and the staphylococcus pyogenes aureus, either alone or in various combinations.

Dr. Caillé⁸ in an article on the treatment of diphtheria presents two skiagraphs (*Plates I and II*) taken by Dr. Samuel Lloyd illustrating the position of the O'Dwyer tube in relation to the anatomical structures of the neck.

REFERENCES.—¹"Pediatrics," No. 12, vol. ii.; ²"Annals of Gyn. and Ped.," vol. x, No. 7, 1897; ³"Jahrb. f. kinder.," B. xlii., H. iii. and iv.; ⁴"Arch. Ped.," vol. xiv., No. 10, 1897; ⁵"Arch. f. Kinder.," B. xx., H. v., vi.; ⁶"Arch. Ped.," vol. xiv., No. 6, 1897; ⁷"Boston Med. and Surg. Journ.," vol. cxxxiii., No. 24; ⁸"Post Graduate," vol. xii., No. 10, 1897.

David Hardie, M.D., Brisbane.

At the Children's Hospital, Brisbane, all cases of diphtheria are now treated with **Behring's Antitoxin**, the dose varying from 2000 to 4000 units. Of seventy-three cases under treatment in the year ending June 30th, 1897, and nearly all of which were verified by bacteriological examination, there were eight deaths, showing a mortality of 11 per cent. After careful observation of the use of antitoxin, Drs. Turner and Ashworth¹ draw the following conclusions:—

(1.) The use of antitoxin serum injections has caused a large and altogether unprecedented fall in the mortality of diphtheria in the Brisbane Hospital for Sick Children.

(2.) This fall in mortality is especially noticeable among the cases in which laryngeal symptoms threaten to cause asphyxia. The proportion of cases recovering without operation has largely increased, and the total mortality has been reduced by three-fourths.

(3.) No toxic symptoms of any gravity have been observed in any instance to follow from the injection of even the largest amount given.

PLATE II.



Intubation Tube *in situ* (antero-posterior view).

(4.) The prolonged gradual convalescence previously observed after severe diphtheria has been in most cases replaced by a speedy return to health.

(5.) Both the serum supplied by the British Institute of Preventive Medicine, and that by the Höchst Fabrik under the supervision of Behring, have been found effectual in the most severe cases, if injected in sufficient quantity. Behring's serum has the following advantages : (a,) Known antitoxin strength ; (b,) Greater concentration ; (c,) Freedom from decomposition ; (d,) Less frequent occurrence of urticarial rash.

With regard to hospital mortality they conclude : "We hardly expect that our hospital mortality will be reduced below 10 per cent. unless fewer moribund or advanced cases with secondary complications, are brought in. But if the profession and public once grasp the truth, that, with rare exceptions, *no child ought to die of diphtheria*, it is probable that the actual mortality will become very low." This latter prediction has been well verified by Dr. Hare,² of Charters Towers, for out of fifty-three cases treated by him with antitoxin, there was only one death. This one was the first thus treated, and received a quite inadequate dose, and might therefore in all fairness be excluded.

The dose varied from 600 to 2,500 units ; one adult received as much as 5,800 in divided doses. It is true the cases were not verified by bacteriological examination, but even so, in a series of fifty-three in which there were seven tracheotomies, the type must have been ordinarily severe, and the results were brilliant.

REFERENCES.—¹ "Intercol. Med. Journ.," Oct., 1896 ; ² "Australasian Med. Gaz.," Oct., 1897.

DISLOCATION (Lateral) OF LEFT KNEE.

Priestley Leech, M.D., F.R.C.S.

The two annexed drawings are given by Mr. Page¹ as examples of a rare form of dislocation.

The case represented in *Fig. 10* was caused by a man being thrown from his saddle, but he retained his hold of the horse's head, and his left foot being in the stirrup, the animal turned round two or three times, then plunged and dragged the patient along the ground.

In *Fig. 11* the man was under a boiler in a crouching position, resting on the right side with the legs semi-flexed. The heavy boiler which was suspended by chains, slipped suddenly, but was arrested by the chains before its whole weight crushed the patient. The result of this lateral pressure caused the dislocation of the left knee joint. The

head of the tibia was displaced outwards and backwards, and at the same time rotated outwards to such an extent that the foot and front of the leg looked almost directly outwards. The head of the tibia was displaced completely off both condyles of the femur, the inner condyle



Fig. 10.

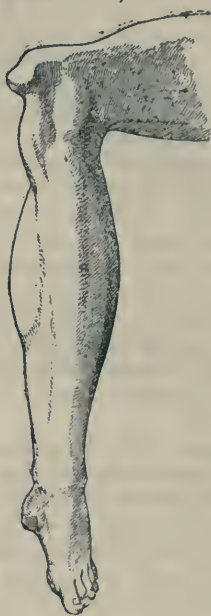


Fig. 11.

almost tearing through the tightly stretched skin over it. Reduction was effected by flexing the leg on the thigh, and the thigh on the pelvis; the leg was then rotated inwards, the head pressed inwards, and the leg extended at the same time.

REFERENCE.—"Lancet," Oct. 3, 1896.

DRESSINGS, Etc.

Priestley Leech, M.D., F.R.C.S.

Dr. Foote¹ thinks that **Formalin** in gelatin powder is of great use in suppuration, especially where there is moderate cellulitis. He had used it in forty-five cases of suppurative wounds. Thirty-five of the cases had been followed up; in three it was a failure; in the remainder the gelatin dried the wound up, checked suppuration, and led to healing in a comparatively short time by granulation.

Dr. Gallant² spoke very favourably of the treatment of suppurative wounds by gauze soaked in 5 per cent. of **Balsam of Peru** in castor oil.

Dr. Stoker³ advises the treatment of suppurating wounds, ulcers, and mucous surfaces with unhealthy or vitiated secretions by pure **Oxygen Gas** or by a mixture of this gas and air. Special apparatus is required, of which illustrations are given. The application of the gas relieves pain whether that of chronic or recent wounds, *e.g.*, burns. Any smell is also removed. No other dressing is applied except the wounds are washed with warm water, and a fine parchment-like film which is formed round the edges of the wound or ulcer, must be removed by means of dissecting forceps after it has been softened with warm water. He says the cicatrices are better than those obtained by other methods; the cicatrices closely resemble the normal skin in colour, they are vascular and not contracted or puckered. This treatment may be applied to diseases of the eye, ear, and nose.

Georgevsky⁴ has observed that the application of compresses saturated with a solution of chemically pure **Bicarbonate of Sodium** and covered with some impermeable material, dries up purulent secretion and cuts short phlegmonous inflammations. It acts much more rapidly than any other known antiseptic. He has used this treatment in a number of cases of whitlow and other phlegmonous lesions, both circumscribed and diffuse. An incision is first made into the suppurative focus, the pus is squeezed out and a 2 per cent. solution of sodium bicarbonate is applied both to the gaping wound and the inflamed tissues round. The pain and suppuration cease and a cure is rapidly effected.

Sprengel⁵ recommends the use of **Iodoform-Calomel** in the treatment of wound surfaces and cavities that are difficult to disinfect, or from which it is difficult to completely eradicate disease as in tuberculous wounds, and in tracheotomies necessitated by diphtheritic membranes. Equal parts of iodoform and calomel are used. It has a caustic action. The author applies the powder by rubbing it in the wound with gauze after all hæmorrhage has been stopped and the wound properly dried. The wound is then packed with gauze; a slough forms which renders the detachment of the gauze much easier. In tracheotomies the powder is strewn over the inner surface of the trachea between the diseased area above and the healthy area below; it greatly hinders the spread of the disease and prevents infection of the wound. In two hundred cases he has had 45 to 60 per cent. of recoveries. The amount of powder varies with the case and the age of the patient. He has used a drachm of the powder without

seeing any serious result, and has employed suppositories and balls of the mixture in cacao butter in sinuses and cavities without seeing any mischievous consequences.

Credé⁶ recommends the use of **Silver Salts** as an antiseptic. He says they require less care and not so many precautions. He uses gauze impregnated with finely divided silver; this is too irritating if used where there is abundant secretion, as the silver is converted into lactate, which is very irritating. In such cases the wound or sore is covered with itrol (citrate of silver), and then with gauze.

Thomalla⁷ has used **Glutol** (formalin-gelatin) for some months. When applied to neatly apposed incisions which have been kept clean, primary union occurs as under other dressings. When used in ragged and irregular wounds suppuration does not occur; necrotic fragments separate quickly and cicatrization advances more rapidly than with other dressings. If applied to suppurating wounds where the drainage is not complete, it has a tendency to form scabs and the pus is retained. Thomalla says it is especially useful in burns, and it is not necessary to remove the scabs. It is particularly useful in small wounds which cannot be bandaged. In such cases he first sprinkles glutol over, then paints on collodion, and over this he again sprinkles glutol, thus forming a watertight dressing.

Miller⁸ endorses Mr. Lane's praise of **Sulphur** as a local application in both septic and tuberculous sores and cavities, and says that in some cases two or three applications may be necessary.

Prof. Julliard⁹ prefers **Dermatol** to iodoform. Dermatol is a subgallate of bismuth; it is a feeble antiseptic, but is more drying than iodoform, and is styptic in its action. A dermatol gauze can be prepared by adding 30 per cent. of the powder to 150 grammes of glycerine in a litre of water; the gauze is dipped in the mixture, dried in air, and afterwards sterilized by superheated steam. It is useful in the treatment of chronic tuberculous abscesses. As a powder it is useful in stinking cavities and sluggish ulcers, and as a dusting powder to allay the irritation of sublimate or carbolic dressings.

M. L. Floersheim¹⁰ calls attention to **Traumatol** as a substitute for iodoform. It is quite as antiseptic as iodoform, less toxic, and has no disagreeable odour; it does not cause erythema or pruritus, and hastens cicatrization. It can be employed as an ointment, *e.g.* :—

R_x Vaseline

75 grains | Traumatol

15 grains

This is useful in affections of the skin or of the eye. Gauze may be impregnated with it and it can be also mixed with oil or collodion.

Pencils may be made as follows: Traumatol 150 grains, powdered

gum 8 grains. This is to be mixed with a sufficient quantity of water and glycerin to form pencils.

Aseptic Catgut.—Dr. Wight¹¹ gives the following as a reliable method of preparing aseptic catgut: First and second sizes of violin, and the so-called “Jim banjo” strings that are uniformly translucent and clear, are procured from the dealers; 2 or 3 grains of **Mercuric Chloride** are rubbed into 2 or 3 ounces of juniper oil; make up to 8 ounces with the same quality of oil, and preserve in a half pint glass stoppered salt bottle. The strength of the solution is very nearly 1 in 4000. The selected sizes of string are each placed in separate smaller bottles, and enough of the oil is poured in to cover them. The bottles and contents are then covered with tissue paper to exclude light, and put away under lock and key for an indefinite time. When required, the gut is placed with aseptic instruments into the following fluid:—

Rx Mercuric Chloride	grs. 2	Carbolic Acid	℥ss
Glycerin	℥ss	Mix well and add Alcohol	℥xv

In this solution the catgut can be transported to the scene of the operation, where it is ready for use. If the surgeon wants to soften it he can do so by immersing it for a few minutes in a 1 in 5000 aqueous solution of mercuric chloride.

Sterilization of Catgut.—Clark and Miller¹² have modified Krönig's method of sterilizing catgut by omitting the use of benzine.

Their method is as follows: (1,) Cut the catgut into the desired lengths and roll twelve strands in a figure of eight form so that it may be slipped into a large test tube; (2,) Bring the catgut gradually up to 80° C. and keep at this temperature for an hour; (3,) Place the catgut in **Cumol**, which must not be above a temperature of 100° C.; raise to 105° C., and keep at this point for an hour; (4,) Pour off the cumol and dry the catgut by the heat of a sand bath or in a hot air oven at a temperature of 100° C. for two hours; (5,) Transfer the catgut with sterile forceps to test tubes previously sterilized as in the laboratory.

A beaker glass of at least half a litre capacity is imbedded for three-fourths of its height in a tin or agate ware vessel of sufficient capacity to permit three-fourths of an inch of sand to be packed about the sides and bottom. In drying or boiling the catgut must not be allowed to touch the bottom or sides of the vessel, but must be suspended on slender wire supports or placed on cotton wool loosely packed in the bottom. A Bunsen burner is placed under the sand bath, and the temperature in the glass beaker is slowly brought up to 80° C. for an hour to dry the catgut. A higher temperature before the

catgut is thoroughly dry renders it brittle. Cumol is then poured into the glass beaker and brought up to a temperature of 165° C., a little short of the boiling point, with two Bunsen burners. A copper wire netting should be placed over the beaker glass to prevent ignition of the cumol. The cumol need not boil. The catgut is left for one hour at this temperature, and the cumol is poured off for subsequent use. The catgut is left in the sand bath for one or two hours until the excess of cumol is driven off and the catgut is dry. It is then placed in sterile test tubes. Cumol though not explosive is very inflammable, and care must be taken to prevent drops from falling in the flame or on the heated metal on which the sand bath rests, or it will flare up and ignite in the beaker.

REFERENCES.—¹ "Med. Rec.," Nov. 21, 1896; ² Ibid., Nov. 21, 1896; ³ "Brit. Med. Journ.," Oct. 24, 1896; ⁴ Ibid. Epit., Mar. 27, 1897, abstr. from "Sem. méd.," March 3, 1897; ⁵ "Centralbl. f. Chir.," No. 5, 1897; ⁶ Ibid., No. 43, 1896; ⁷ "Therap. Monats.," Jan. 1897; ⁸ "Practitioner," Feb. 1897; ⁹ "Rev. Méd. de la Suisse Rom.," p. 104, Feb. 20, 1897; ¹⁰ "Journ. des Praticiens," quoted in "New York Med. Journ.," Oct. 17, 1896; ¹¹ "Amer. Med. and Surg. Bull.," May 10, 1897; ¹² "Johns Hopkins Hosp. Gaz.," Feb. and March, 1896.

DYSMENORRHŒA (Spasmodic). *Theoph. Parvin, M.D., Philadelphia.*

Dr. G. Drummond Robinson¹ advises the following mixture:—

R̄ Antipyrin	gr. x	Sp. Am. Aromat.	ʒj
Pot. Brom.	gr. xv	Aq. Chloroformi	ʒj

This is to be given every three hours while the pain is severe; only three doses to be taken.

Dr. Robinson further states: "In many cases drugs fail, and then the best treatment is to dilate the internal os with bougies. The dilatation should be done under anæsthesia, and the bougie is firmly grasped by the internal os, when attempts are made to withdraw it. Dilatation is carefully carried a little beyond this point, so that the ring is thoroughly stretched. In most cases this relieves pain; in some it completely cures; in others the pain returns after a longer or shorter time."

Farlow² recommends the following suppository to be introduced every night, beginning five days before the time of the period:—

R̄ Ext. Cannabis Indica	Ol. Theobrom.	ʒjss
Ext. Belladonna	āā gr. j	

Drummond Robinson³ commends Nitro-Glycerin (gr. $\frac{1}{100}$) three times a day, in the treatment of spasmodic dysmenorrhœa with much vaso-motor spasm (as shown by cold extremities, scanty flow,

etc.). The drug should be continued for some time. Here, too, the carbonate and acetate of ammonia are indicated.

Tincture of Castoreum, ℥20 to ʒj thrice daily, appears to lessen uterine spasm.

Stewart⁴ employs **Arsenite of Copper** with **Pulsatilla** :—

℞ Arsenite of Copper	gr. 1·60	Tinct. of Nux Vomica	gtt. 8
Tinct. of Pulsatilla	gtt. 15	Distilled Water	ʒiij

M. One tablespoonful every hour or half-hour until the uterine pain is relieved.

Dalché and Heim⁵ report their clinical observations upon the use of a dry extract of **Senecio Vulgaris** in pill form, 6 grains each, to the number of 8 or 10 daily. It seems to calm menstrual pain so long as the genital organs are healthy ; but when there is uterine or peri-uterine disease it is without effect. This limits its employment to such conditions as the dysmenorrhœa of chloro-anæmics, of nervous hysterics or neurasthenics, of young girls whose menstrual pains of long duration appear to be due to painful or defective ovulation. Beyond its influence upon pain it is an open question whether it affects the appearance of menstruation, favouring the establishment of the menstrual flow. It fails in the presence of various uterine and peri-uterine difficulties as well as in the painful symptoms of the inter-menstrual period.

Dr. Bedford Fenwick⁶ recommends :—

℞ Phosphori	gr. $\frac{1}{10}$	Quin. Sulph.	gr. j
Ferri Valerianat.	gr. j	Ext. Aloes	gr. j
Zinci Valerianat.	gr. j		

Sig.—One such pill to be taken three times a day.

Also :—

℞ Tinct. Cannabis Ind.	℥ x	Glycerin	ʒj
Syr. Chloral. Hydrat.	℥ xx	Aq. Camphor.	ad ʒj
For one dose.			

This should be taken as soon as the pains commence, and may be repeated in three hours. It is well to give only two doses in any given twenty-four hours, as many women show signs of considerable excitement, with giddiness and delirium, after repeated doses of Indian hemp.

REFERENCES.—¹“Clin. Journ.,” May, 1897 ; ²“Chicago Med. Times” ; ³“Clin. Journ.,” Mar., 1897 ; ⁴“Med. Rec.,” Nov., 1896 ; ⁵“Amer. Journ. Med. Sci.,” Feb., 1897 ; ⁶“Med. Times and Hosp. Gaz.”

DYSPEPSIA (Nervous). (See “Stomach, Neuroses of.”)

DYSPHAGIA. (See “Larynx, Tuberculosis of.”)

EAR (Diseases of).*J. Dundas Grant, M.D., F.R.C.S.***THE CHIEF MANIPULATIONS PRACTISED IN THE TREATMENT OF DISEASES OF THE EAR.**

By massing together the descriptions of these proceedings much repetition is avoided in the sections on the treatment of the various diseases.

I.—CLEANSING IN GENERAL.

Syringing the Ear—Meatus and Tympanum in general.—Under good illumination, the point of the syringe should be introduced into the meatus while the auricle is pulled upwards and backwards, or in children downwards and backwards. The stream is directed along the roof and front wall of the meatus, and on its exit is caught in a vessel held close to the side of the neck below the ear. The following precautions are required :—

The syringe should be sterilizable, and if possible should be provided with separate orifices (*Fig. 12*) for filling and for emptying. The water

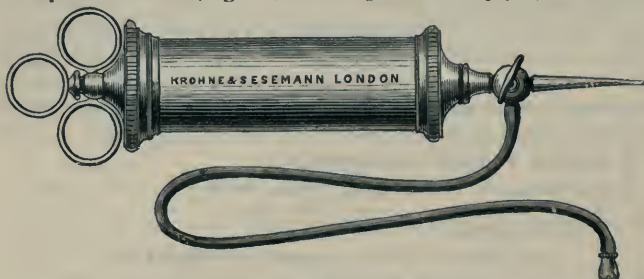


Fig. 12 —Two-way Aural Syringe.—D.G.

or solution employed should have been sterilized by boiling, and should be as warm as can be comfortably borne. All air should be expelled from the syringe before it is introduced into the ear. After syringing, the ear should be thoroughly dried out by means of sterile absorbent wool. A pledget of sterile cotton-wool should be kept loosely in the meatus for a few hours after syringing.

In case of *extreme narrowing of the meatus* produced by bony, inflammatory, or other forms of swelling, a very fine gum-elastic tube



Fig. 13.—Fine Gum-Elastic Tip for Syringe.

(*Fig. 13*) may be fitted on the tip of the syringe and introduced beyond the seat of narrowing. An intra-tympanic catheter, though rather long, may be employed for the purpose.

Meatal Intra-tympanic Syringing is practised by means of a fine curved tube introduced by the meatus through a perforation in the membrane into the tympanum, attic or antral aditus. There

are various forms — Hartmann's, Pritchard's, Robertson's, Politzer's (gum elastic), and Milligan's, of which the last (*Fig. 14*) is the most

practical as regards steadiness and visibility. The fluid may be driven by gravitation from an elevated reservoir, or by a syringe worked by an attendant, either being connected with the cannula by means of an india-rubber tube.

Cleansing and Drying the Ear: (a,) Meatus and Tympanum in general.—After syringing, or instead of it, the ear may be cleansed by means of sterilized absorbent cotton-wool introduced with the angular force s, or twisted on the end of a roughened wire or whale-bone wool-holder (*Fig. 15*). This must be

Fig. 14.
Milligan's Tym-
panic Syringe.

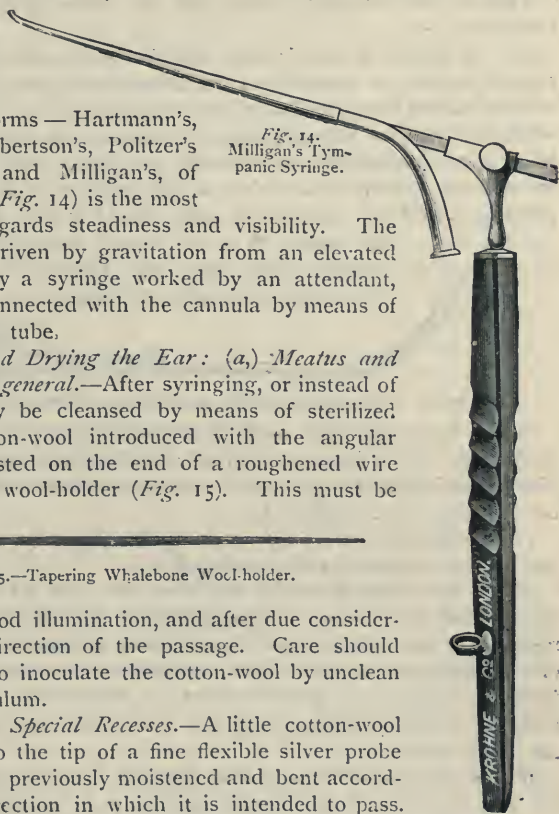


Fig. 15.—Tapering Whalebone Wool-holder.

done under good illumination, and after due consideration of the direction of the passage. Care should be taken not to inoculate the cotton-wool by unclean fingers or speculum.

(*b,*) *Attic or Special Recesses.*—A little cotton-wool is twisted on to the tip of a fine flexible silver probe which has been previously moistened and bent according to the direction in which it is intended to pass. This may be preceded by syringing with an intra-tympanic cannula (Milligan's or other), but not in those cases in which there is a cavity lined with a cholesteatoma-forming membrane, when syringing with watery fluids is interdicted.

Eustachian Irrigation of the Tympanum.—(1.) By means of the *Eustachian Catheter alone.*—The catheter being passed as usual and held carefully in position after verification by means of auscultation, the point of a syringe is adapted accurately to it either directly or with an intermediate india-rubber tube. Several ounces of liquid are then

injected, and the drops as they emerge from the external meatus are caught in a basin.

This method frequently fails, and the following one has to be employed :—

(2.) By means of the *Catheter and Intra-tympanic Tube*.—A well-curved catheter is passed into the Eustachian tube, and through it a Weber-Liel's fine gum-elastic intra-tympanic tube of such a length as when pushed home to project one inch beyond the tip of the catheter (*Fig. 16*). Auscultation is carefully practised while air is forced through this tube by means of an air-bag, so that the fact of its being properly placed may be made certain. Fluid is then driven through by means of an accurately fitting syringe, and it usually issues from the meatus in a fair stream which can be caught in a basin.

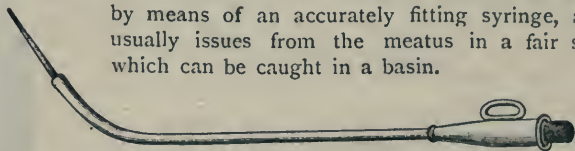


Fig. 16.—Intra-tympanic Catheter passed through Eustachian Catheter.

N.B.—These processes are only applicable when the membrane is perforated. As a large portion of the fluid regurgitates into the pharynx such liquids only should be employed as are neither disgusting nor injurious when swallowed.

The Disinfection of the Ear must be thoroughly carried out before any operative measures are instituted.

If the membrane is intact, and there has been no discharge, the meatus may be cleansed thoroughly at the time of the operation by means of a solution of 1 part of perchloride of mercury in 3000 parts of a combination of equal parts of rectified spirit and distilled water (Dench), though it is better that the ear should have been syringed daily for the two preceding days with a 1 in 5000 aqueous solution of the perchloride.

If there has been otorrhœa of long standing, the ear must be syringed for several days with a 1 in 5000 solution of perchloride of mercury, or a weak solution of peroxide of hydrogen, or 1 in 50 carbolic acid.

Should there be evidence of the formation of cholesteatomatous masses as the result of old-standing suppurative inflammation, the writer would counsel the avoidance of watery instillations, although a rapidly conducted syringing may be permissible for the removal of the coarser *débris* if it is followed up at once by the instillation of warm rectified spirit. In such cases an occasional instillation of carbolyzed glycerin (1 in 30) is very useful.

The skin of the auricle should be thoroughly cleansed with soap and

water, then with chloroform, ether or absolute alcohol, and, lastly, with the 1 in 3000 solution of perchloride of mercury in alcohol and water. The meatus should, after this cleansing, be plugged with iodoform gauze, and the auricle covered with an antiseptic dressing.

The Sterilization of Instruments before their employment in the ear is of the greatest importance, but especially so when operative procedures are undertaken. This is best effected by boiling for five minutes in a 1 per cent. solution of bicarbonate of soda all those that will stand boiling, and dipping into the boiling liquid for a moment delicate instruments with fine edges or points. All instruments should be wiped thoroughly with sterilized wool or gauze before being boiled or otherwise purified. Those that will not stand boiling (gum-elastic catheters, etc.) should be wiped clean, and then be washed through with boiled water, after which they may be placed for a few minutes in 30 per cent. carbolic acid, or, preferably, in a 1 per cent. solution of pheno-salyl (Lermoyez). A very useful "all round" antiseptic, though of a somewhat unattractive odour, is lysol, a form of saponified cresol, which, even in very dilute solutions (1 in 1000 to 500), is most efficacious for the cleansing of specula, probes, forceps, and other instruments, as well as the aurist's hands. After sterilization, all instruments may be placed in a solution of boric acid or of pheno-salyl till used.

II.—METHODS OF INFLATING THE TYMPANUM.

Valsalva's Method.—The patient compresses both nostrils by means of the finger and thumb, and makes an expiration as if for the purpose of blowing his nose, but without allowing the air to escape by the nostrils. The expired air can then only find an outlet into the Eustachian tubes, thereby blowing out the membrana tympani. Many people find this to act better if at the same time the mouth is kept widely open. As an indication that the method is being practised properly it should be noticed that the sides of the nose above where they are being pinched with the finger and thumb bulge out during the expiratory effort. By means of a tube connecting the patient's and the surgeon's ears the latter auscultates, and with a little practice comes to recognize the presence or absence of the normal "pick" accompanying the entrance of air into the tympanum. The hearing power should be tested after the proceeding.

Politzer's Method.—The patient is directed to hold a little water in his mouth and not to swallow it until the word is given. The surgeon with a tube connecting his own and the patient's ear, so as to judge of the effect of inflation, places the tip of the so-called Politzer bag inside one of the patient's nostrils while he compresses the opposite one. At

the appropriate moment he gives the order to "swallow," and at the same time he compresses the bag. The air should then pass through the Eustachian tube into the tympanum. Patients are sometimes awkward about this, and the operator without a little practice is apt to fail also; but if the compression is practised at the time the *Pomum Adami* is seen to rise, the experiment will most likely succeed. It will be remembered that during the action of swallowing, physiological dilatation of the Eustachian tube takes place; hence the superiority of this method over the following one, which, however, is simpler, and in many cases quite effectual.

Simplified Politzer's Method.—The blowing with a Politzer bag is



Fig. 17.—Simplified Method of Inflation.

practised while the patient puffs out his cheeks and lips and expires as if "blowing out a candle." In some cases this is more readily done if a narrow tube (Fig. 17) be placed between the lips, and the person or child is directed to "make it whistle."

Gruber's Method is to cause the patient to utter the syllables "hic, hac, hook," and during the prolongation of the final "k," the inflation is practised as before. In Londoners it is very difficult to get a sufficiently vigorous enunciation of the consonant—not to mention the aspirate—to make this method available.

Dundas Grant's Eustachian Self-Inflator.—This is an india-rubber



Fig. 18.—Eustachian Self-inflator.—D.G.

tube of about fourteen inches in length, having at one end a nose-piece adapted to fit comfortably into one nostril, and at the other a glass

mouth-piece with a bulb (*Fig. 18*) in which is placed a little cotton-wool. A few drops of chloroform and acetic ether, diluted if desired with a little rectified spirit, are placed upon this cotton-wool by means of a medicine dropper. The patient introduces the nose-piece into one nostril, while he compresses the other; he then blows forcibly with the cheeks distended, and in this way expired air charged with a vapour of chloroform is driven up the Eustachian tubes into the tympanum. By this modification of Valsalva's method advantage is taken of the fact that chloroform vapour passes through the Eustachian tubes with less difficulty than uncharged air (*Fig. 19*).

The Passage of the Eustachian Catheter.—The point of the instrument is passed along the floor of the nose until it reaches the naso-pharynx; it is then turned so as to point outwards and a little upwards, and then drawn back until the point passes over the projection of the posterior lip of the Eustachian tube, being then guided into the perceptible orifice. A small air-bag is then inserted into its outer end, and (the operator employing the auscultation tube as usual) air is driven through the catheter so as to enter the tube and inflate the tympanum. The instrument should be about five inches in length, and the point should be curved for a distance



Fig. 19.—Mode of Using Self-inflation.

of one inch. It may be made either of vulcanite or of silver, and in any case care should be taken that the margins of the tip are thoroughly well rounded. If a vulcanite instrument is used the point may be drawn straight over the posterior lip of the Eustachian tube without causing any particular discomfort, but if the instrument is a silver one, then in the drawing out it is advisable to turn the tip slightly downwards so as to "round" the obstacle. The degree to which the point is turned outwards is indicated by the ring on the outer extremity of the instrument, and it will be found a very good guide to direct this towards the external auditory meatus, it being a generally applicable rule that the pharyngeal orifice of the Eustachian tube is nearly on a level with the external orifice of the auditory meatus.

It is advisable to introduce the catheter through a nasal speculum, and under good illumination, so that the hand may be guided by the

eye, and in the case of inexperienced operators or highly sensitive patients, especially if there is any nasal obstruction, to apply cocaine to the interior of the nose so as to rob the proceeding of its chief discomfort.

It is often advisable to take as our land-mark the posterior margin of the hard palate, in which case the catheter is passed along the floor of the nose as before with the beak downwards, and while the patient is directed to breathe forcibly through the nose so as to cause a drooping of the velum; the concave angle of the catheter is made to hug the posterior margin of the bony palate, and the tip is then rotated outwards so as in most cases to enter the tube with very little discomfort.

Again, the posterior edge of the septum may be made use of, the beak of the catheter being hooked on to it by an inward turn. The catheter is held in this position and is rotated on its long axis outwards through nearly the third of a circle, when it can often be readily passed into the Eustachian tube. It need hardly be mentioned that in the very rare cases of absolute occlusion of the nares an insurmountable obstacle is present which must be kept in mind, as also that if the naso-pharynx is occupied by an extensive crop of adenoids or other growths, all these manipulations are hampered or rendered impossible.

The Eustachian Bougie.—The Eustachian bougie is a thin flexible rod of celluloid, whale-bone, or gum-elastic material about nine inches in length. It should be perfectly smooth, and rounded at the tip, which should be its widest portion, and, as a rule, should be just over a millimètre in diameter. Several may be employed, deviating slightly in each direction from this measurement. The instrument is introduced, like the intra-tympanic catheter, through a Eustachian catheter of which the tip is slightly longer and more curved than usual. The bougie is marked in ink at a distance from its point equal to the length of the catheter, so that it can be known when the tip of the bougie has reached the tip of the catheter. Another mark is made at the distance of something slightly less than an inch, (24 mm.), and again one at a further distance of somewhat less than half an inch (11 mm.); the former representing the length of the membranous, the latter that of the osseous portion of the Eustachian tube. No accuracy of measurement will, however, atone for the absence of delicacy in the manipulation of the instrument. When in use it should be introduced as far as it will go without causing pain in the ear. When used for simple dilatation it should be left *in situ* for a few seconds, but for massage it should be gently worked up and down in the Eustachian tube through a distance of about the third of

an inch. If bleeding is occasioned, inflation should be scrupulously omitted for forty-eight hours at least, to avoid the risk of inducing emphysema. The intra-tympanic catheter may with advantage be used in place of a solid bougie, because, after its introduction, the fact of its being in the Eustachian may be verified by auscultation when air is blown through it.

The Electrolytic Eustachian Bougie.—A modified Eustachian bougie having a wire running up its centre, a small metallic knob at its tip, and a connecting screw at its outer extremity is used for the purpose of employing electrolysis for the dilatation of the Eustachian tube. The negative pole is connected with the bougie, and the positive with a moistened pad placed on the back of the neck. The current should not exceed four milliampères, and may be kept up for four minutes.

III.—APPLICATION OF REMEDIES.

Application of Heat.—This may be accomplished by means of an india-rubber hot-water bottle or fomentations covered with oil-silk (poultices are best avoided); or Leiter's coil (with hot instead of cold water); or the well-known small Japanese hand-warmers; or, in houses where electric light is laid on, the recently invented electrotherm.

The application of Cold. Leiter's Cold Coil.—A coil of pewter-piping, or an oval-shaped plate of pewter on which one or two rows of piping are fixed, is so shaped as to fit round the ear (Fig. 20). The free ends of

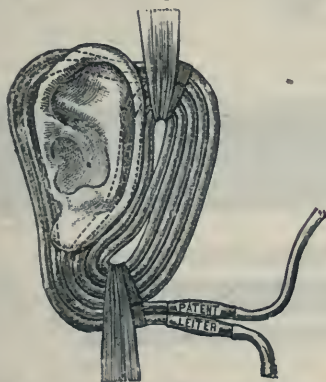


Fig. 20.—Leiter's Coil for the Ear.



Fig. 21.—Dr. Sprague's Aural Ice-bag.

the pipe approximate below, and to them are adapted long india-rubber tubes. At the ends of these are hollow leaden weights which are placed each in a large pail. One pail is filled with cold or iced water and

placed on a table, the other on the floor. By sucking through the lower weight a syphon action is soon set up, and the water runs continuously through the coil from the upper to the lower pail. When the upper one is nearly emptied, it is only necessary to put it on the floor, and lift the other one on to the table. The apparatus can be easily tied on to the patient's head, so that he moves in bed or on his chair as much as the length of the india-rubber tubes will permit.

The Ice-bag.—An ordinary bladder or an india-rubber bag filled with broken ice can be placed over the auricle, or else a special flat india-rubber bottle with a hole through which the auricle can be passed (Fig. 21).

Depletion by means of Leeches. The Natural Leech.—It is well to



Fig. 22.—Marks for Application of Leeches.

mark with pen and ink the points, best in front of the tragus, where the leeches are to be applied (Fig. 22). During the application, for which a leech-glass (or paper substitute) is necessary, the meatus should be plugged with cotton-wool.

The Artificial Leech is preferable (Fig. 23). A very elegant and practical form of Heurteloupe's apparatus is easily obtainable, and to it can be readily adapted a leaden end-piece with an orifice of convenient size (about one-third of an inch) for application above, below, or on the root of the zygoma.

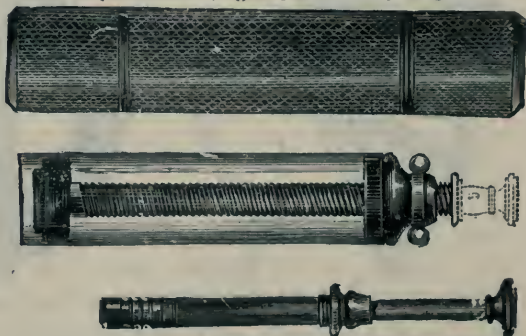


Fig. 23.—The Artificial Leech

The introduction of "Drops": (a,) Into the Meatus and Tympanum in general.—About 10 drops of the liquid are warmed in a teaspoon over a lamp or, if inflammable, in the bottle in a cup of hot water, the cork being out. A test tube is a very convenient apparatus. The patient's head being bent well over to the opposite side (it may be rested on the table or the handle of a crutch-stick), or the patient lying on his side with the affected ear uppermost, the fluid is gently poured into the meatus. It may be forced into the deeper recesses by means of pressure on the tragus, especially if the patient at the same time (in case of perforation) performs the movement of swallowing. The ear should be kept in the position indicated for ten minutes or a quarter of an hour, and a pellet of non-absorbent cotton-wool should be introduced if it is desired to retain the medication in the ear.

(b,) Into the Attic or Special Recesses.—This may be accomplished by means of Milligan's (*Fig. 14*), or other tympanic syringe. The fluid may be contained in a small glass syringe or a bulb from which it can be blown, or the small quantity required may be sucked up into the instrument by means of an india-rubber tube with a glass mouth-piece. Very neat instruments for the purpose have been designed by Blake and by W. R. H. Stewart.

The Alcohol Treatment.—The prescription is for rectified spirit, pure or containing boric acid (6 per cent.) or perchloride of mercury (1 in 2000). On the first occasion about 5 minims are diluted with 10 minims of warm water and instilled into the meatus (*vide* "drops"). Each time less and less water is added until the spirit is used quite pure, as the parts become less sensitive to it. When there is much discharge the ear may be syringed out, and then most carefully dried with absorbent wool each time before the alcohol drops are instilled. At first the drops may be used thrice daily, then less frequently as the discharge diminishes. If the alcohol produces severe pain (more than a temporary warmth) its use should be omitted, if only for a time.

Insufflation of Powders into the Ear.—Into the *Meatus and Open Tympanum in general.*—The ear

having been dried out, a few grains of the powder are placed in a quill or special powder insufflator (*Fig. 24*), the point of which is then introduced into the meatus. By

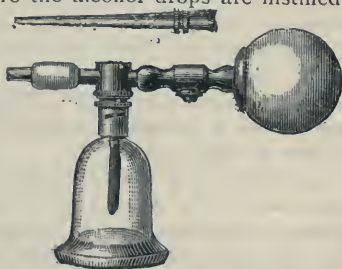


Fig. 24.—Kabierski's Powder Insufflator.

a very gentle puff of air the powder is driven into the cavity. When merely a slight coating of powder is wanted the empty quill should be re-introduced and another puff of air given so as to blow out the excess of the powder.

Into the Attic and other Recesses.—A small quantity of powder is picked up by means of Milligan's intra-tympanic syringe (perfectly dry) to which for this purpose the writer has had a special steel fitting adapted. The curved point is introduced under good illumination into the perforation (cocainized if necessary), and the powder is driven in by means of air from the operator's mouth, Politzer has devised a suitable instrument with a compressible air-ball, and Gompertz some delicate celluloid tubes.

Minute quantities of antiseptic powders may be introduced on the extremity of a bent probe covered with cotton-wool, as employed for drying out.

Eustachian Injection of Drops into the Tympanum.—(a,) By means of the *catheter only*.—The catheter being well introduced, about 20 drops of the liquid are driven into it by means of a syringe. The air-bag is then applied and the drops are forced along the Eustachian tube in a more or less nebulized form. This is facilitated by the performance of swallowing movements.

(b,) By means of the *Intra-tympanic tube*.—The drops are forced by means of a syringe through the intra-tympanic tube passed as described through an Eustachian catheter. The air-bag is then applied, and by it the fluid is driven onwards, a considerable amount of pressure being required to overcome the friction in the narrow tube (*Fig. 16*).

The Collodion Treatment for relaxed membrane : (a,) *The membrane being totally or in large part relaxed.*—The tympanum having been inflated the patient lies down on a couch with the head turned over on to the sound side. About 10 minims of contractile collodion (not the flexile which contains castor oil) are poured into the meatus and allowed to run down on to the membrane. After about five minutes any excess of collodion is allowed to run out of the meatus on to a piece of cotton-wool.

(b,) *There being merely a limited patch of relaxation (atrophic or cicatricial).*—The relaxed portion having been blown out a small pledget of wool twisted on a holder so as to form a brush, is dipped in the contractile collodion and then very quickly applied to the relaxed spot through the speculum under good illumination. The brush is drawn out along the nearest portion of the meatal wall so that a streak of collodion may extend on to this

The Artificial Drum.—The most practicable form of artificial drum is a little pellet of cotton-wool of the size of an ordinary shirt-button, moistened with parolein and applied against the membrane by means of an ear-forceps (*Fig. 25*). An endeavour should be made to make it



Fig. 25.—Forceps for Introducing the Artificial Drum.

press on the head of the stapes in the postero-superior quadrant. The hearing for the watch and more particularly for the whistled voice should be tested before and after the application, and pressure should be exercised on different points till the position most favourable for audition is discovered. The patient very soon learns to introduce and remove the pellet if improvement is effected by its use, and to avoid any anxiety as to ability to extract it, the drum may have attached to it a loop of thread about an inch and a quarter in length, by which it can be pulled out.

The writer finds the following the most satisfactory way of making a “captive” artificial drum: A wisp of long-fibred cotton-wool about half an inch in length is drawn out of the packet. A piece of thin thread is tied round its middle and the loose fragments of fibre are pulled away from each end. The fibres of wool are then spread out in a stellate form and subsequently their tips are turned in towards the centre. There is thus formed a springy pad of the required size with a thread securely attached to it.

Some patients derive greater benefit from the use of a roll of cotton-wool an inch in length, twisted up like a “wick.”

Rules for the Use of the Artificial Drum.—All acute symptoms (pain and pyrexia) should be allowed to subside, and it is better, though not indispensable, that all discharge should have disappeared before the drum is used. It should only be employed in cases of bilateral deafness, and preferably in one ear only at a time—alternate ears on alternate days, and only in patients who are old enough to manipulate it for themselves. At first it should only be worn for about an hour, and gradually longer till it is retained all day. At night it should be extracted and a little boracic powder blown in. Should discharge recur it is well to omit its use, but this is *de rigueur* if pain or fever come on.

Cauterization.—By means of the *Galvano-cautery*.—For the galvano-cauterization of granulations inside the ear the platinum tip of the cautery should be very short, and in order that it may redden instantly and as quickly cool, the tip must be filed down to as fine a point as is compatible with its glowing without burning through. It is

important to dry the meatus before introducing the cautery, as any moisture present is readily heated to boiling point, and may scald the skin of the meatal walls.

By means of *Chemical Caustics*.—The best of these is liq. ferri perchloridi fortior, and is applied by means of a tiny pledget of cotton-wool twisted on the point of a tapering probe—Down's whalebone wool-holder (*Fig. 15*)—after the parts have been dried by means of a larger and looser pledget which may be conveniently twisted on the other end of the wool-holder. Deliquesced chromic acid, strong nitric acid, or any strong caustic solutions, may be employed in the same way, or crystals of perchloride of iron or sulphate of copper may be applied on the small moistened pledget.

Solid nitrate of silver or chromic acid may be fused on the point of a roughened copper wire by moistening the tip, picking up a small fragment of the crystal and warming it over a spirit-lamp. Trichloroacetic acid may be fused on to a bent eyed probe, a crystal being picked up with the loop, and allowed to fuse into the eye over the lamp.

The Application of Galvanism to the Ear.—This is best done by means of one electrode placed on the tragus and another on the back



Fig. 26.—Lewis Jones's Binaural Electrode.

of the neck. When both ears are to be treated together, an electrode, shaped like a binaural stethoscope (*Fig. 26*) is employed with one tip on the tragus of each ear. The battery used is one giving a continuous current,

and supplied with a milliamperemeter and a rheostat.

For stimulating the auditory nerve the electrode on the tragus is connected with the negative pole, that on the neck with the positive one. The number of cells is gradually increased, or the current is increased by means of the rheostat till the milliamperemeter registers from 4 to 5 milliamperes (in case of the two ears together, 8 to 12). If a more than usually powerful stimulus seems called for, a current reverser is necessary to make use of the sudden alternation from the positive to the negative pole. It is said that in the normal ear about 10 milliamperes are required to excite auditory sensations, though a much weaker current will awaken visual flashes and occasion vertigo. It is not required to raise the current to this strength.

To soothe the Auditory Nerve and Centres.—In some cases of tinnitus aurium of nervous origin the application of the continuous current with the positive rheophore on the tragus and the negative one on the neck is beneficial. The current should be very slowly and gradually raised from zero till it quiets the noises or reaches the strength of not more than between 3 and 4 milliampères (for both ears together between 6 and 8). Great care must be taken not to allow the current to be accidentally interrupted or rapidly diminished, as the "anodal opening" shock is injurious. It should be slowly lowered by means of the rheostat or by drawing the rheophores gradually away by a sliding movement, so that they do not leave the skin till several inches away from the ears. (More minute details will be found in Lewis Jones's "Medical Electricity.")

The Interrupted Faradic Current.—This is used with one pole on the tragus and the other on the back of the neck, and only for stimulating effect in cases of obvious hysterical deafness, or in acute cases when the hearing-power does not return with the subsidence of the inflammatory conditions.

Rarefaction of air in the Meatus. Suction, Massage and Gymnastics of the Tympanum.—By means of Siegel's Speculum (Fig. 27).—This

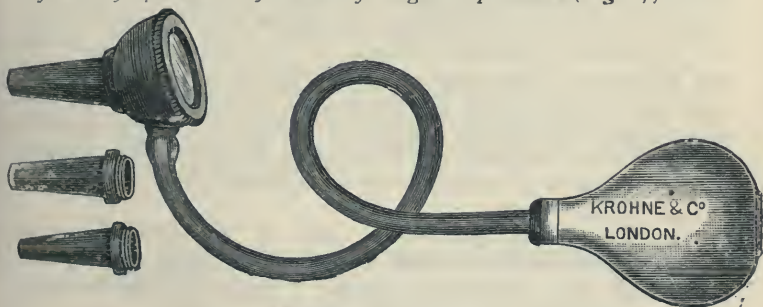


Fig. 27.—Siegel's Speculum.

must be provided with a very powerful india-rubber air-bag. The tip is firmly fixed in the meatus after the bag has been compressed. Under careful ocular observation the bag is allowed to expand gently so as to exercise suction on the membrane and ossicles. By alternating compression and suction a degree of massage, and especially of gymnastics of the structures, can be practised. These same effects may be produced by means of *Delstanche's* "rarefacteur" and his "masseur" in even a more vigorous form.

Kirchner's apparatus for the same purpose consists of an india-

rubber tube having a tip for the meatus at one end, a mouth-piece at the other, and a bulb in the middle. *Dundas Grant's Eustachian Self-Inflator*, without wool, may also be used, the nasal tip adapting itself very comfortably to the meatus while suction is exercised by means of the mouth-piece. The two latter instruments may be used by patients themselves, the suction being limited by their sensations.

By means of Lucae's Spring Pressure Probe.—This consists of a rod, having at its tip a slightly excavated expansion adapted to fit the short process of the malleus. Its other end is inserted into an ivory stem, and when pushed in it compresses a spiral spring, like a railway buffer. The force of the pressure conveyed to the short process is thus mechanically modified. When in use the tip is covered with a tiny shred of moistened cotton-wool, and is placed against the short process to which vibrations are to be imparted. Care and gentleness are required in order to avoid ecchymosis of the membrane. It ought to be followed by inflation.

Application of Remedies to the Eustachian Tube:—

(a,) *To the Orifice.*—Remedies may be applied to this portion of the tube by the means directed for the treatment of the naso-pharynx.

(b,) *To the Interior of the tube.*—A Eustachian catheter having been passed in the ordinary way, from 5 to 10 drops of the desired solution are introduced by means of a syringe. The air-ball is then applied to the catheter and compressed so as to drive the liquid into the tube. This is rendered still more effectual if at the same moment the patient dilates the tube by performing the act of swallowing. Deeper portions of the tube may be reached by means of the intra-tympanic catheter.

The application of Remedies to the Naso-pharynx:—

(a,) *Through the Nose.*

(1,) *The fine nasal spray.*—The point of the instrument does not fill the nasal orifice, so there is no risk of the spray entering the Eustachian tubes. There should be only a single ball so that the force of the compression may not be diminished.

(2,) *The coarse nasal spray.*—The tip of this instrument (Leffert's) is conical and of such a size as to block up the nares. Fluid cannot therefore escape by it but must go backwards to the naso-pharynx and down the throat or the opposite nostril. The patient should bend the head forwards, breathe through the open mouth, and strictly avoid swallowing movements which would open the Eustachian tubes.

(3,) *The nasal douche.*—By means of a siphon or a raised reservoir with a tube issuing from its lower part, or a Higginson's enema syringe with a fine point, a large quantity of warm liquid is made

to pass up one nostril, round the back of the septum, and down through the other. There is great risk of acute purulent otitis being caused. (Only advisable in atrophic rhinitis.)

(4.) *The simple syringe*.—A moderate degree of cleansing may be conveniently accomplished by the use of a simple glass syringe with a piece of fine india-rubber drainage-tube on its point so as not to obstruct free outflow from the nares.

(5.) *Perforated nasal tubes*. *Von Troeltsch's tube*.—Von Troeltsch adapted to the syringe or douche a metal tube with perforations on its sides for a short distance from its closed tip.

Madeuf's soft rubber nasal cannula.—Madeuf has had similar tubes made of soft india-rubber, which can be introduced into the nose without causing any discomfort (*Fig. 28*).



Fig. 28.—Madeuf's Nasal Cannula.

(b.) *Through the Mouth*.

(1.) *The fine post-nasal spray*.—A spray with its tip curved upwards is employed. The tip is passed through the mouth and behind the soft palate, while the patient endeavours to "breathe through his nose."

(2.) *The post-nasal syringe*.—Fluids in fine streams may be injected from behind forwards by means of a suitably curved tube with several holes near its tip, introduced through the mouth and behind the soft palate (*Fig. 29*).



Fig. 29.—Post-nasal Tip adaptable to the Two-way Syringe.

(3.) *The post-nasal cotton-wool brush*.—The point of a bent wire wool-holder (*Fig. 30*), is moistened and a small mop of cotton-wool is



Fig. 30.—Post-nasal Cotton-wool Holder.

firmly twisted on to it. This is then dipped in the required pigment and passed behind the soft palate.

It is hoped that the above details will be found a useful addition to the article on the Treatment of Diseases of the Ear, published in the "Annual" for 1896.

AURICLE.—*Keloid of the Lobule* in connection with ear-piercing seems to be much more frequent among the negro than the white population. Scheppegegrell¹ deprecates the use of caustics of any kind after operative removal for fear of causing cicatricial growth, the favourite soil for the development of keloid. A review of various opinions on the treatment is given, but clean removal and careful suture are insisted on.

Hæmatoma Auris.—McConachie² found recovery, though with deformity, was expedited by the injection of **Carbolic Acid Solution**—strength not stated—in addition to incision, evacuation and bandaging. It will be remembered that in many cases the timely use of **Lead Lotion** averts the necessity for incision, and that **Massage** and suitable pressure may induce absorption and minimize disfigurement (D.G.).

Aural Herpes is uncommon, and may be mistaken for eczema or erysipelas. Somers³ recommends internally **Salines** and **Antipyretics**, with regulation of diet, and locally an ointment of **Yellow Oxide of Mercury in Lanolin**, great care being taken to prevent the rupture of the vesicles.

EXTERNAL MEATUS.—*Furuncle of the Meatus* is an affection characterized by an amount of pain and constitutional depression quite out of proportion to its danger. We have previously enumerated such plans of treatment as the application of **Carbolic Acid in Glycerin** (1 in 20), "aural ovoids" of gelatin containing **Morphia**, **Opium**, or **Boric Acid**, drops of **Liq. Plumbi Subacetat. Dil.**, Burow's solution (Plumb. Acet. 1, Alum. Acet. 5, Aq. Dest. 100), etc., etc. Dunn⁴ recommends the daily application of **Salicylic Acid** in collodion (5j ad 3j). Field⁵ recommends pure **Glycerin** or painting with **Tincture of Iodine** locally, and **Yeast** internally. A writer⁶ advises an ointment of **Belladonna** and **Mercury**, and if the pain is very extreme, the use of **Leeches**. He avoids incision till the boil is thoroughly mature and the physician is sure that pus is present. (The editor finds incision (under gas by means of a recurved knife) beneficial, if the site of the furuncle is sufficiently definite to ensure the selection of the right spot.)

Eczema of the meatus is often the cause of furuncular inflammation from staphylococcal inoculation. Its treatment is for many reasons important. Randall⁷ properly insists on thorough cleansing

away of the scales, crusts, and *débris* in the first instance. He finds this facilitated much more by **Peroxide of Hydrogen** than by the oil or vaselin more commonly employed. After the cleansing the real medication has to be carried out. In acute severe and erysipelatous forms, he applies **Ichthyol** pure or in a 25 per cent. ointment; in moist forms a 2 to 10 per cent. solution of **Nitrate of Silver**; in the dry but irritable, 5 to 10 per cent. **Calomel Ointment** (extolled also by Daly); in the more torpid, 2 to 5 per cent. ointment of **Yellow Oxide of Mercury** or **Salicylic Acid**; in the most latent, **Resorcin** of the same strength. He insists on the greater efficacy of the remedies when personally applied by the practitioner.

THE MEMBRANA TYMPANI.—*Simple Acute Myringitis.*—This is an uncommon affection as found apart from acute external otitis and acute inflammation of the middle ear. With pain or discharge there may be the most extreme abnormalities in the appearance of the membrane, with comparatively slight disturbance of hearing. The membrane may be red or its outer layer may bulge in the form of one or more granulation-like blebs. When these are punctured the tympanum may not be perforated, and air, on inflation, may not pass through. Sheppard⁸ narrates two illustrative cases. He recommends puncturing the blebs (but taking care not to perforate the membrane) and local blood-letting by means of two or three leeches on the tragus, and gentle warm douching.

Simple Chronic Myringitis is characterized by a discharge—often very offensive—and the formation of granulations or of epithelial scales without the auscultatory signs of perforation. Sheppard⁹ employs cleansing by means of the syringe or the use of **Peroxide of Hydrogen**. To large granulations he applies **Chromic Acid**, to small ones strong **Liquor Ferri Perchloridi**, or a 25 to 50 per cent. solution of **Nitrate of Silver**. He makes little reference to the treatment of the desquamative form in which **Carbolized Glycerin** (1 in 20), with or without the addition of 1 to 5 per cent. of **Salicylic Acid**, is valuable.

MIDDLE EAR.—*Acute Inflammation.*—Fruitnight¹⁰ deprecates the use of powders, and advises, after careful irrigation, the instillation of a few drops of a warmed solution of **Boracic Acid in Alcohol** (gr. v-x ad 3ss). If the discharge persists he employs irrigation with a very weak solution of **Nitrate of Silver** (from 1 to 5 grains to the pint). Importance is attached to the treatment of the naso-pharynx, and of any constitutional taint. Becker¹¹ makes considerable use of **Ice** or **Leiter's Cold Coil**. Muzzy¹² deprecates too ready resort to paracentesis of the membrane, especially in sensitive children with much swelling of the canal, considering it safer to depend on **Heat**,

Leeches, and Cathartics. Pierce¹³ forbids local bleeding, poulticing, anodyne drops and politzerization, and advises (what is practically Gradenigo's method) asepsis of the meatus and auricle, paracentesis of the membrane, drainage by means of a wick of absorbent iodoform or naphthol-chinolin gauze, and outside dressing with an antiseptic pad over the auricle. (The editor has found this treatment satisfactory in a number of cases.) Pierce considers cold generally preferable to heat. (The editor applies cold in the first place, and when it is not grateful to the patient—as in many instances—he substitutes heat, usually in the form of a hot-water bottle. He knows no better rule for selection between the two agents.) Mervill Hopkinson¹⁴ finds relief follow syringing with a 1 in 1000 solution of **Perchloride of Mercury** as hot as can be borne, the use of the Politzer bag, and the internal administration twice daily of **Pilocarpin** (gr. $\frac{1}{4}$). Dench¹⁵ advises frequent syringing with half a pint of a solution of perchloride of mercury (1 in 3000 to 5000), followed by the instillation of a few drops of perchloride of mercury 1 part, water 1000, and rectified spirits 2000. He deprecates the use of peroxide of hydrogen, powders, or tampons. Drainage is to be facilitated by incision of the membrane or removal of granulations. (The editor offers no apology for reproducing *en masse* the large number of methods recommended, in view of the need for every possible arrow in the quiver. The great principles are, in mild cases, to place the patient in quiet, favourable surroundings; induce diaphoresis and catharsis; introduce warm sterile solutions of **Cocain**, 2 to 5; **Atropin Sulph.** 1, **Boric Acid** 5, and **Distilled Water** 100 parts. In severe or septic cases the meatus and auricle should be sterilized by means of syringing with 1 in 1000 perchloride, or swabbing with a 1 in 3000 solution of perchloride in equal parts of alcohol and water, the auricle being also thoroughly cleansed; early incision and subsequent antiseptic dressing is necessary, and cold should be applied over the mastoid by means of a Leiter's coil or an ice-bag. The naso-pharynx should be cleansed by means of gentle irrigation with a 1 per cent. solution of salt, soda, and borax, or an equivalent nasal tabloid. Should pyrexia persist in spite of evacuation of pus, the mastoid cells are almost certainly involved, and increasing constitutional or cerebral disturbance would demand the gouging open of the cortex.)

Chronic Suppurative Inflammation of the Middle Ear.—It has already been pointed out¹⁶ that in many cases the persistence of the suppuration is due to neglect, and that in these instances recovery is often brought about by careful cleansing and mild antiseptics. For this purpose the pus should be blown out by inflation (Poltzer's

method); the ear should then be syringed out with a 1 per cent. solution of common salt, bicarbonate of soda or sulphate of soda, then dried out with absorbent cotton-wool (clean, or better, sterilized); next, drops consisting of a saturated watery solution of boric acid, with or without the addition of from 30 to 90 per cent. of spirit of wine, should be instilled, the surplus dried out, and the outer orifice loosely closed (not tightly packed) with a pledget of antiseptic gauze or wool. This *routine preliminary treatment* is only contraindicated if the presence of cheesy or epithelial masses in the meatus or the washings indicates that a *desquamative process* is in progress, and that a cholesteatoma may be in formation. Under such circumstances watery instillations are injurious, and for cleansing and purifying purposes drops of carbolic acid (1 part) in glycerin (10 parts) are to be preferred. After the clearance of such *débris*, the re-development of the scaly masses is best prevented by the use of instillations of alcohol containing 15 per cent. of boric and 2 per cent. of salicylic acid, diluted at first with 2 parts of water and gradually less and less, as the patient's tolerance increases, till the alcoholic drops are used quite pure. The condition of the nose and naso-pharynx, and the general constitution require careful attention. This rational mode of treatment is very much what Mr. Arthur Cheatele¹⁷ has formulated, especially in its application to childhood.

The Sequelæ of Suppurative Inflammation of the Middle Ear.—The Treatment of Deafness due to Residua of Suppuration in the Middle Ear.—The writer¹⁸ of the present article pointed out the hopefulness of the treatment of the class of cases described, as compared with its hopelessness in the dry or sclerotic forms of non-suppurative catarrh. The general object is to liberate the stapes by restoring the ventilation through the Eustachian tube, cleansing out any sacculated cavities, severing limiting bands, loosening or removing the larger ossicles, then applying a substitute for the tympanic structures in the form of a cotton-wool pellet moistened with pure liquid vaselin and furnished with a reliable thread. The pellet has to press gently on the stapes. When the antero-inferior part of the membrane is lost, the tensor tympani tendon may be divided. Indrawn cicatrices, after being blown out, may be fixed and tightened up by the application of contractile (not flexible) **Collodion**. When from the amount of the destructive change or its extension to the labyrinth local operative measures are fruitless, practical hearing may still be improved by the use of a **Hearing-Trumpet**, or **Acoustic Exercises**, or by instruction in the art of "**Lip-Reading**." When a perforation persists, it is often undesirable to close it, even if it were

possible, as hearing may be worse after. If, however, it is found that the application of a disc of paper or a thin layer of moist cotton-wool simply covering over the aperture improves the hearing-power, an attempt may be made to close it. For this purpose Okuneff¹⁹ recommended the application of **Trichloroacetic Acid** to the edges of the perforation, and Alt²⁰ and Gompertz²¹ have successfully employed this method in several cases. (The editor has been able to produce a complete though not a lasting closure, but feels encouraged to make further trials.)

The Dangerous Sequelæ of Suppurative Inflammation of the Middle Ear.—The surgical treatment of *Disease of the Attic and Mastoid process* is discussed by Bronner,²² who points out the advantages of the so-called Stacke's operation over Schwartz's in chronic cases. He quotes Schwartz's list of indications for operative opening of the mastoid process as follows:—

(1,) Acute primary or secondary inflammation of the mastoid process, if, under treatment, the symptoms do not improve in a few days.

(2,) Chronic inflammation of the mastoid process, with recurrent attacks of swelling.

(3,) Fistula over or near the mastoid process.

(4,) Chronic inflammation of the middle ear without apparent affection of the mastoid process, if there are any symptoms of retention of pus, or of diseased bone (pain, fever, etc.), or if there is a cholesteatoma.

(5,) Persistent pains over the mastoid process.

(6,) Chronic otorrhœa without any symptoms of retention of pus or swelling of the mastoid process as soon as we have reason to think that the inflammation has spread beyond the middle ear.

In cases where doubt arises as to whether the mastoid operation should be performed or not, Bronner makes the pertinent observation that "we make exploratory incisions in obscure abdominal cases, why not in obscure mastoid cases?"

Stenosis of the External Auditory Meatus after Operation for Middle-Ear Disease is to be guarded against by careful plugging through the meatus for several weeks, according to Miller,²³ whether the post-auricular opening be plugged or not. Should stenosis be present, he treats it by means of a soft flexible metal tube "about one and a-quarter inches in length, with a flange which has two perforations, to which tapes are fastened so that it can be tied in," the diameter of the tube being from $\frac{1}{8}$ to $\frac{1}{4}$ of an inch.

General Pyæmic Infection following Aural Suppuration.—Oscar Brieger²⁴ recalls the fact that this may occur either with or without

thrombo-phlebitis of the lateral sinus. The condition of the sinus can only be made out by operative exposure and exploratory puncture followed, if a negative result is obtained (withdrawal of liquid blood), by incision of the venous channel. If thrombosis is found, the sinus should be opened freely. Ligature of the internal jugular vein is never justified unless thrombosis has been positively demonstrated, and according to Brieger it is superfluous, and, under certain circumstances injurious, if in presence of a solid occlusion in the direction of the vein, evidence is wanting for the assumption of the extension of the thrombosis into the vein. The constitutional condition after the sinus has been opened is a questionable guide for ligation of the jugular. The primary step is the free opening of the mastoid, and the next one is the evacuation of extra-dural pus, the latter proceeding sometimes leading to cure of thrombo-phlebitic pyæmia. (The editor would strongly urge the necessity—especially in the acute cases—of bearing in mind that persistence of pyæmic symptoms may be due to suppuration in cells near the tip of the mastoid process, and that before proceeding to severer measures these should be thoroughly opened.)

Chronic Dry Catarrh of the Middle Ear.—Galvanic Dilatation of the Eustachian Tube.—Dr. Duel²⁵ describes a very convenient form of bougie for the purpose of applying the negative pole for electrolytic purposes to the interior of the Eustachian tube. He believes that a large percentage of cases of chronic catarrhal otitis are due to narrowing of the lumen of the Eustachian tube by hypertrophy of the mucous tissues surrounding it, and considers that electrolytic dilatation is therefore of great value. He further expresses the conviction that the negative pole carried directly into the tympanum will by its electrolytic action bring about the absorption of hypertrophic deposits. He describes the method as being a new one, evidently unaware of the attention drawn to it by Drs. Steavenson and Lewis Jones,²⁶ in their well-known work on Medical Electricity. Unfortunately the most intractable cases of dry catarrh of the middle ear are exactly those in which there is no narrowing of the Eustachian tube at all, and it is questionable whether in the cases of stenosis the electrolytic dilatation is any better than that effected by means of a celluloid bougie or gum elastic intra-tympanic tube. Dr. Duel's instrument is made by Meyrowitz, of New York, and shows some points of improvement in the details of construction.

The permanent retention of an Artificial Perforation in the Tympanic Membrane.—Dr. Alt²⁷ found that in a case in which during the injection of **Yaselin Oil** into the Eustachian tube, the membrane

was accidentally perforated, considerable relief to the subjective symptoms followed, and the perforation remained permanently open. Professor Gruber carried out the principle by making an intentional perforation in another case, and continuing the vaselin injections.

Pneumatic Massage of the Tympanal Membrane and Ossicles.—Dr. Theobald²⁸ describes the various forms of **Massage** hitherto employed, and recommends for patients' use an instrument consisting of an india-rubber bulb taken from an eye dropper and placed upon a small vulcanite tube with a bulbous tip which fits tightly into the auditory canal. It can be used by the patient both for drawing the membrane out and pushing it in, thus effecting whatever pneumatic massage is capable of, being checked by the patient's sensations.

Operative Interference in Chronic Ear Diseases (non-suppurative).—Mr. Arthur Cheate²⁹ has sought to obtain the opinion of a number of recognized otologists with regard to the value of operative interference, and he has published their replies. The conclusions are not very encouraging to operative interference, and it must be admitted that, up till the present, these conclusions are somewhat indefinite. "Operative interference is not beneficial in sclerosis." "The cases which appear to yield the best results are those in which the drum is markedly retracted and changed." "According to the present lights, before operating all other methods of treatment should first be given a good trial; if these fail, the facts of the case should be fairly laid before the patient, who probably would not consent to operation unless the hearing was extremely bad in both ears, interfering seriously with business or pleasure, or unless the tinnitus was such as to make life a burden. The risk of being made worse by the more radical operation should especially be laid before him."

DISEASES OF THE INTERNAL EAR, AUDITORY NERVE, ETC.—*Acute inflammation of the labyrinth* in children is seldom recognized till its disastrous effect on the hearing leads to the calling-in of the aurist. Compaired³⁰ cites two cases, of which one was primary and the other due to mumps. He states that in the acute stage the disease is usually treated as acute meningitis or typhoid fever. Meningitis is usually fatal, while most cases of labyrinthitis recover, and the paralyses (sixth nerve, etc., D.G.) met with in meningitis do not occur in labyrinthitis. In typhoid fever, deafness, pain in the ear and delirium occur late, and are not accompanied by vertigo; in labyrinthitis they come on early, accompanied by severe vertigo. It need hardly be said that the general condition of the patient renders it almost impossible to practise any tuning-fork tests till the acute stage is past.

Giddiness and Staggering in Ear Disease.—These symptoms are

the most prominent in disease of the labyrinth, but they occur with considerable intensity in many cases of middle-ear disease. In the latter, Barr¹¹ points out that the giddiness is usually preceded by other symptoms of ear disease, that the vertigo, nausea, and vomiting are very amenable to treatment, the noises in the ear usually got rid of, and the hearing in most cases much improved. In these respects there is a striking contrast with vertigo due to labyrinthine disease. In middle ear disease, he finds the subjective noises rarely so distressing or the defect of hearing so extreme. The relative preponderance of bone-conduction over air-conduction is of course of great diagnostic value. (In middle-ear giddiness, which may be called "pseudo-Ménière's disease," small doses of **Quinine** are of great value as a supplement to the usual treatment of the middle-ear.—D. G.)

Tests for Hearing.—Bezold³² considers as the best and most rapid test, the human voice uttering the numbers (German). For bone-conduction he excludes very high and very low forks. He gives as the clinical picture of ankylosis of the stapes, the case of a normal looking membrane, diminution or loss of hearing for the lowest tones of the scale, elongation of bone-conduction, a much shortened or negative Rinné. The diagnosis based on these points has been confirmed by *post-mortem* examination. Bezold repeats the warning against dependence on Rinné's test alone, in cases of unilateral deafness. Randall³³ has found that certain small screw-drivers made from steel wire and sold at bicycle shops, have quite a pure strong tone of about 35,000 vibrations per second. These may be used for testing the hearing for the highest tones as a substitute for Galton's whistle, or Koenig's rods.

REFERENCES.—¹"New York Med. Journ.," Oct. 17, 1896; ²"Amer. Journ. Med. Sci.," May, 1897; "Journ. of Eye, Ear and Throat Dis.," vol. i., No. 3; ³"Amer. Med. Surg. Bull.," Oct. 31, 1896; "Journ. Laryng.," Feb., 1897; ⁴"Arch. of Otol.," xxiv, 2, and "New York Med. Journ.," Oct. 17, 1896; ⁵"Brit. Med. Journ.," June 12, 1897; ⁶"Journ. des Praticiens," May 2, 1896; "Therap. Gaz.," Nov. 16, 1896; ⁷"Therap. Gaz.," Feb. 15, 1896; ⁸"Laryngoscope," vol. i., No. 6; ⁹loc. cit.; ¹⁰"Med. News," Sep. 12, 1896; ¹¹"Monats. f. Ohrenheilk.," vol. xxix, No. 4; ¹²"New York Med. Journ.," July 4, 1896, and "Therap. Gaz.," Oct. 15, 1896; ¹³"Journ. of Laryng.," April, 1897; ¹⁴"Journ. Amer. Med. Assoc.," Feb. 27, 1897; "Journ. of Laryng.," April, 1897; ¹⁵"Amer. Med. and Surg. Bull.," Nov. 14, 1896; ¹⁶"Med. Ann.," 1895; ¹⁷"Pediatrics," Sep. 15, 1895; ¹⁸"Clinical Journ.," Dec. 23, 1896; ¹⁹"Monats. f. Ohrenheilk.," Jan., 1895; ²⁰Ibid., March, 1897; ²¹"Wien. klin. Woch.," 1896, No. 38; ²²"Brit. Med. Journ.," Oct. 15, 1896; ²³"Lancet," May 15, 1897; ²⁴"Arch. of Otol.," vol. xxv, No. 4; ²⁵"New York Med. Journ.," Jan. 16, 1897; ²⁶Lewis,

London; ²⁷ "Monats. f. Ohrenheilk.," March, 1897; ²⁸ "Johns Hopkins Hospital Gaz.," ²⁹ "Practitioner," May, 1897; ³⁰ "Rev. hebdom. de Laryng.," May 16, 1896, and "New York Med. Journ.," Oct. 17, 1896; ³¹ "Brit. Med. Journ.," May 1, 1897; ³² "Arch. of Otol.," July, 1896; ³³ "Philadel. Policlin.," Feb. 27, 1897.

ECLAMPSIA. (See "Pregnancy, Disorders of.")

ECZEMA.

T. Colcott Fox, M.B.

As usual there has been a great amount written about eczema, but for the most part covering well trodden ground.

Duhring' contributes a paper on *the local treatment of the regional forms of eczema*, which cannot be epitomized in a small compass on account of the numerous formulæ given. He thinks there are many cases of relapsing and chronic eczema which it is almost impossible to cure without the aid of drugs, diet, and hygiene. All cases, however, do not require internal therapeutics.

The **Compound Tincture of Mineral Tar** (coal tar, 1 part, digested with 6 parts of tincture of quillaja with frequent agitation for not less than eight days, or preferably longer, and then filtered) is an excellent preparation for the employment of tar in a liquid form, especially in chronic dry forms of eczema of adult scalps. It should be used in a strength of 3 to 20 minims to the ounce of water.

When considering eczema of the face he commends **Acetanilide** in cold cream (40 to 80 grains to 3j) and the **Linimentum Exsiccans** (Pick) consisting of tragacanth, 5 parts; glycerin, 2 parts; boiling water, 93 parts; to which Duhring adds 2 parts of boric acid to preserve it. Zinc oxide, about 20 grains to 3j, and such drugs as carbolic acid, ichthyol, boric acid, and the like may be added. It forms a thin pliable varnish, protecting the skin and excluding the air, and readily removable by washing.

Also in dry, irritable and itching eczema the following: **Powdered Tale** and **Starch**, of each 100 parts; **Glycerin**, 40 parts; **Lead Water**, 100 parts (Boeck); and **Lassar's Paste** (zinc oxide, 3ij; starch powder, 5ij; petrolatum, 5iv). To this may be added **Camphor**, 10 to 20 grains; **Salicylic Acid**, 10 to 15 grains; **Carbolic Acid** or **Resorcin**, 10 grains.

In the acute, weeping eczema of the legs, Duhring strongly recommends the free use of **Black-Wash**, followed by **Zinc-Oxide Ointment**. He also says the employment of plasters is a comparatively recent, distinct improvement over inunction with ointments in the treatment of chronic eczema of the leg, whether the patch be dry or wet. The following modification of Pick's original formula is commended:—

℞ Liquefied Soap	Olive Oil	10 parts
Plaster (U.S.P.) 90 parts		

This is easily made, cheap, readily spread and adhesive. **Salicylic Acid** (2 to 5 to 10 per cent.) is a valuable addition, but the greater the quantity of this added the less the amount of olive oil needed. No other method of treating patches of chronic eczema rubrum of the leg is so generally useful.

The glycerin-gelatin preparations of Pick and Unna are also commended for dispensary practice. Duhring gives the formula :—

℞ Gelatin		Glycerin	
Zinc Oxide	āā 10 parts	Water	āā 40 parts
To be melted and painted on.			

In *eczema of the hands and fingers* the **Litharge Glycerin Starch Pastes** are often serviceable in the subacute, papulo-vesicular variety :—

℞ Litharge	10 parts	Starch	10 parts
Glycerin	30 parts	Vinegar	60 parts
To be cooked to 80 parts.			

We may here note the introduction by Unna² of an elegant preparation called **Gelanthum**, with which almost any active medicament can be compounded. This also dries on as a kind of varnish, and is likely to prove very useful. Skinner² has modified the original formula as follows :—

℞ Gum Tragacanth	5ijss	Thymol	gr. ½
Gelatin Opt.	5ij	Aquæ Destill.	q.s.
Glycerin	5vj		

Place the tragacanth and gelatin each in 10 ounces of water in covered jars, and make the final quantity up to 12 ounces with water.

In the same article Skinner gives the formula for an ointment base, easily absorbed, readily applied, aseptic, and not too greasy :—

℞ Lanolin	5iv	Lanolin Soap	5iv
Vaselin Alb.	5ij	Aquæ Rosæ	5iv

Dissolve the soap in the rose-water, melt the two other ingredients, stir in the solution, and continue stirring until cool. Anything but an acid can be mixed with the rose-water. More than ½ ounce of added spirit acts adversely on the lanolin soap.

The same pharmacist recommends the following formula for deeply fissured skin :—

℞ Emol Keleet	5ij	q.s., ut fiat pasta	
Zinc. Oxidi	5j	Lanolin	
Glycerin Plumbi Subacet.,		Vaselin	āā 3ss
To be applied at night.			

Cantrell³ deals with the treatment of *eczema of the umbilicus* and of the *flexures*.

Barazzi⁴ goes over the whole ground of the treatment of eczema and gives many well-known formulæ. The only point we will note is the French treatment of acute vesicular eczema by potato starch poultices, or on the face by repeated atomizations of sterilized water.

Those who wish to study two recent expositions of the internal treatment of eczema will find such by Besnier⁵ and by Brocq and Jacquet.⁶

Amongst papers on Eczema in Children may be noted those by Duenges,⁷ by Rosenberger, and by S. M. Ward, abstracted in "Pediatrics," by Bulkley⁸ and by Colcott Fox.⁹ The latter writer insists on four points in the treatment, viz.: (1,) Absolute cleanliness of the surface; (2,) The selection of a local application on the general principles applicable to eczema; (3,) The prevention of rubbing and scratching by light splints fixed to the elbow region, which is better than any other method adapted to this end; (4,) Internal treatment and regulation of the feeding suited to meet any departure from a state of health or irregularities of dieting.

Amongst newer remedies for eczema may be mentioned an aqueous solution of **Permanganate of Potash** (1 to 2 per cent. or stronger), recommended by Bulkley for subacute patches. Gomez has obtained unusually satisfactory results in both weeping and dry eczemas by the use of **Yasogene** or **Oxygenated Vaselin**, made by boiling vaselin with 4 per cent. of nitric acid, and washing away the excess of acid after cooling. The addition of 10 to 20 per cent. of ichthyol is very serviceable. Klotz, at the American Dermatological Association, 1897, gave a most favourable account of **Ichthyol**, and also of the allied **Thiol** and **Tumenol** in 50 per cent. aqueous solution, or in a 10 per cent. tincture, in dermatitis. They form a thin varnish over the parts, contract the vessels and are anti-parasitic. Maclellan and Allan in this country have extolled the properties of a saturated solution of **Picric Acid** painted on in acute and subacute outbreaks of eczema. Gaucher, Leredde, Brousse and others join in the chorus of praise. Waldo has had an unusual experience in witnessing the production of carboloria.

Finally we note the following contributions: Hartzell¹⁰ insists on the keraplastic and decided sedative properties of **Resorcin** and recommends the following preparations:—

For erythematous eczema.—Resorcin (gr. x to xv); glycerin (℥x); liq. calcis (ʒj). The lotion to be dabbed on the part three or four times daily until it stops itching and burning, and lessens inflammation.

In moist oozing eczemas the addition of some insoluble powder, as **Zinc Oxide** or **Calamin**, is beneficial; and if the oozing is very abundant, **Subgallate of Bismuth** (3 grains to the ʒj) may be added.

In dry and scaly eczema the following paste is suggested : Resorcin (gr. xv) ; pulv. amyli, pulv. zinci oxidi (āā 5ij) ; petrolat. (3j).

Prof. Lassar,¹¹ of Berlin, scouts the idea of irritation from internal sources being a cause of eczema, and points out how favourable are the skin changes in eczema to the growth of saprophytic and pathogenic micro-organisms. He paints the skin with **Tar** and follows with a bath to disinfect the skin. Then he dusts with **Venetian Talc.** If the disease persists, in addition to the tar baths, he makes the remedies penetrate by using unguents, such as his salicylic paste ; or, if this is too adherent, he suggests as a medium oxide of zinc (60 parts), and olive oil (40 parts).

REFERENCES.—¹“Amer. Journ. Med. Sci.,” April, 1897, and “Brit. Med. Journ.,” 1897 ; ²“Brit. Journ. Derm.,” Feb. 1897 ; ³“Therap. Gaz.,” Feb. 5, 1897, and “Amer. Med.-Surg. Bull.,” May 16, 1896 ; ⁴quoted “Rév. de thérap. méd.-chir.,” June 1, 1896 ; ⁵“Traité de thérap. Appliquée ; ⁶“Précis de Dermatol ; ⁷“Centralb. f. Kinderheilk.,” 1896, vi, p. 182 ; ⁸“Arch. of Ped.,” Feb. 1897 ; ⁹“Treatment,” 1897 ; ¹⁰“Therap. Gaz.,” p. 363, June 15, 1896 ; ¹¹“Dermat. Zeitschrift.,” Bd. ii, Hft. 6, 1895.

ENDOMETRITIS (Senile). *Theophilus Parvin, M.D., Philadelphia.*

Dr. Ernest Herman¹ sums up our knowledge of this rare disease.

Symptoms and course—Copious purulent discharge, often mixed with blood ; pain, which may be so bad as to keep the patient awake at night ; and sometimes wasting. The discharge is the invariable symptom ; pain and wasting may be slight or absent.

The disease begins after the menopause. No connection has been shown between it and any condition existing during menstrual life. We know nothing as to its causation. It occurs in the virgin, the nulliparous, and the parous ; the author knows not in which it is, relatively to their numbers, the most frequent.

It has little or no tendency to spontaneous cure. Herman has seen one case which had gone on for four years. In some, notwithstanding the persistence of the disease, the condition of the patient changes little. In others, the course of the disease is clinically that of cancer.

These two facts—(a,) that the disease is hard to distinguish from cancer in an early stage, (b,) that it sometimes runs the same clinical course as cancer—lead the writer to think that if milder treatment does not quickly produce decided benefit, it should not be continued, but the uterus should be removed.

TREATMENT.—When consulted by an old woman about a copious purulent vaginal discharge, the vagina should be first treated. Swab the vagina out with strong **Carbolic Acid**, and prescribe frequent astringent injections, such as **Zinc Chloride**, 5 to 10 grains to the pint.

Begin with the weaker and increase the strength if necessary. Repeat the application of strong carbolic acid two or three times, if necessary, with weekly intervals. Take care that none goes on the vulva. If discharge comes from the uterus, there may be so little of it as not to trouble the patient when the vaginal discharge has been stopped. If treatment of the vagina does not abolish the discharge, the cervix should be dilated with laminaria tents, and the interior of the uterus explored. If growths are felt, they should be scraped away and examined with the microscope. If there are no outgrowths the endometrium should be scraped with a blunt curette, any bits detached reserved for the microscope, and then the interior of the uterus swabbed with strong **Carbolic Acid** or **Lin. Iodi**. This will almost always remove the symptoms for a time. If after a short interval they return, and become as bad as before, the best treatment is to remove the uterus.

Matthews Duncan advises the injection of mild astringents into the uterine cavity through a hollow sound.

Goelet² deprecates caustics, and insists on the necessity for perfect asepsis of the endometrium by irrigation with **Lysol** solution with drainage.

REFERENCES.—¹“Treatment,” March, 1897; ²“Med. Rec.,” Oct. 17, 1896.

ENTERIC FEVER. (See “Typhoid Fever.”)

ENTEROPTOSIS. (See “Stomach.”)

EPILEPSY.

James Shaw, M.D.

Voisin and Petit¹ consider that, for the production of epileptic onsets, a hereditary predisposition exists in the central nervous system; that the epilepsy may result either from some reflex nervous disturbance or from an auto-intoxication, and that this may be caused by an auto- or hetero-infection. They urge the importance of close attention to alimentation, the use of purgatives, intestinal antiseptic medication, diuretics, etc., in all cases of epilepsy.

Percy Bryant's² treatment of idiopathic epilepsy at the Buffalo State Hospital is a combination of a milk diet with suitable exercise and immediate relief of any symptoms of constipation by cathartics and enemata. A patient suffering from the psychical manifestations of the disease is purged, and has all nourishment withdrawn for a sufficient length of time to give the requisite rest to the digestive organs, nothing but water being meanwhile allowed. At the end of two days abnormal hunger disappears. After three or four days of this abstinence—even eight or ten days, in the case of violent mania or

status epilepticus—a small quantity of milk is allowed; this is gradually increased from 1 to 6 glasses between morning and evening, and persisted in for several weeks, if not months. The condition of the digestive organs is the guide, and not the physical state of the patient. After two to four months a gradual return to the regular diet is permitted; but an immediate resort to the above is to be had on the reappearance of any symptoms of toxæmia.

Agostini,³ believing that auto-intoxication plays an important part in the production of epileptic fits, advocates that we should endeavour as far as possible to remove the factors of such intoxication. In the first place we must endeavour to remove toxic substances that may have formed in the alimentary tract. As the best means of attaining this object, he recommends repeated **Washing out of the Stomach with Salt Water**, especially when fits are anticipated and during the occurrence of a series. He also advises the use of **Purgatives, Saline Enemata, Diuretics**, (especially **Lactose**), and the abundant administration of milk along with **Salol** or **Naphthol** as intestinal antiseptics. In the second place we should endeavour to increase the activity of processes of oxidation and of normal tissue changes in general. These objects, he thinks, are best secured by the use of small doses of alcohol, careful hygiene, fresh air, and a moderate amount of muscular exercise. He recommends a mixed diet with plenty of milk. Lastly, we should endeavour to diminish the reflex activity of the cortical nerve-centres which in epileptics are in such unstable equilibrium. He believes that the only really effective drug for this purpose is **Bromide of Potassium**. He recommends that it should be given in somewhat smaller doses than those generally used, and that it should be combined with **Salol**. Its efficacy is increased by the antitoxic therapeutic measures already mentioned. If gastric catarrh appears, the administration of bromides should be suspended, and the attention directed to the removal of the catarrh.

MacLachlan⁴ advises that all sources of peripheral irritation should be sought out and combated, and that, in view of nervous instability, the treatment should be sedative, tonic, and calculated to make a vigorous organism.

Spratling⁵ believes that the colony system embraces the features *par excellence* for the moral treatment of the epileptic. Here he is obliged to enter upon a systematic and routine life, with enough diversion, freedom of movement, and recreation to promote physical development, and is enabled to acquire such mental accomplishments as he is capable of receiving. He must take his meals at regular hours; he can not have food that is not good for him, for the reason

that such food is not prepared ; he must eat in a manner that conduces to good digestion, and not constantly gormandize, as is his wont ; he is made to employ his energies in the prosecution of some given task, varying his work from time to time.

Bouneville⁶ uses **Camphor Monobromate** in the treatment of vertiginous epilepsy, given in daily doses of 40 centigrammes gradually increased to a gramme and a-half, and continued for months.

REFERENCES.—¹"Journ. Ment. Sci.," Oct., 1896 ; ²Ibid., July, 1897 ; ³Ibid., July, 1897 ; ⁴"Glas. Med. Journ.," April, 1897 ; ⁵"State Hosp. Bull.," Jan., 1897 ; ⁶"Ann. méd. psychol.," Sept.-Oct., 1896.

Græme M. Hammond, M.D., New York.

Dr. Alexander Haig¹ believes that uric acid fluctuation is the cause of the fits, and hence regards the **Dietetic Treatment** as most important. By diet he reduces the formation of uric acid, so that the greatest quantity the patient is likely to get into his blood as the result of such fluctuation shall never, or only very rarely, be sufficient to affect the blood-pressure and the intracranial circulation to a serious extent. The epileptic wave of excretion runs very high, but only for a short time, and it is very difficult to keep the general level of uric acid excretion so low that these waves will not occasionally get high enough to cause seizures by raising the blood pressure in the brain.

Flesh-food must be avoided entirely, also all soups and meat extracts. Tea, coffee, cocoa, and all other vegetable substances containing xanthin compounds are to be regarded as containing uric acid. The writer, recognizing the importance of a wisely-regulated diet in this disease, would also forbid such nitrogenous vegetables as peas and beans, and such fish as salmon and halibut.

Dr. Frost,² of the Willard State Hospital, considers **Sulphonal** and **Trional** valuable remedies as adjuncts to the bromides with which they can profitably be alternated, and as safe, effective and pleasant sedatives to relieve the restlessness and violent tendencies of many patients. The dose of either varied from 5 grains twice daily to 10 grains three times daily, the object being to obtain no more than a fairly pronounced effect. The larger doses were needed only for a few days, and after the patients were thoroughly under the influence of the drug the size and frequency of the dose were diminished according to individual susceptibility.

Peterson³ recommends doses of from 5j-ij of the **Tincture of Simulo** thrice daily. He considers the **Opium-Bromide** treatment of Flechsig of great value, particularly in old and obstinate cases when all other agents have proved ineffectual. **Adonis Vernalis** conjoined with the bromides is an efficient method of treatment. In cases of auto-

intoxication the regulation of the diet, frequent drinking of hot water, occasional flushing of the large intestine, and the use of intestinal antiseptics are all indicated.

The "Gaz. hebdomadaire de médecine et de chirurgie."⁴ recommends the following:—

R. Codein	ʒi		Infus. Adonis Vernalis	ʒiv
Potass. Bromid.	ʒij			

M. Dose, from half-a-teaspoonful to a teaspoonful thrice daily.

Rodon⁵ reports the case of a girl, eighteen years old, who had suffered from epilepsy since her first menstruation and had been under treatment for years. Bromides and other drugs had proved utterly futile. He gave her **Ovarine Tablets**, 1 a day at first, and gradually increased the dose to 10 daily. In the course of several months the attacks ceased. Discontinuance of the drug was followed by fresh seizures, while its resumption caused their subsidence.

Robinson⁶ speaks highly of the efficacy of inhalations of **Amyl Nitrite** in the *status epilepticus*. His first case was a woman, thirty-four years old. When he saw her she was comatose and was having seizures about every twenty minutes. In the interval she lay with flaccid limbs, purple face, dilated pupils, and stertorous respiration. The temperature was 103°, the pulse 130. After other treatment had been tried without avail, she was made to inhale 3 minims of amyl nitrite. An hour later the dose was repeated. There was progressive improvement from the first inhalation, and complete recovery took place in a few hours. The second case was a girl, nineteen years old, who had been many hours in the epileptic state. The amyl nitrite proved equally efficacious.

REFERENCES.—¹ "Amer. Journ. Med. Sci.," April, 1897; ² "New York Med. Journ.," March 6, 1897; ³ "Amer. Journ. Med. Sci.," April, 1897; ⁴ "Med. Times," May, 1897; ⁵ "Amer. Med. Surg. Bull.," Nov. 10, 1897; ⁶ "Lancet," Oct., 1896.

EPISTAXIS.

R. Lake, F.R.C.S.

Quite the most usual site of the hæmorrhage is the anterior part of the septum, especially when there is heart disease or hypertrophic cirrhosis of the liver, and when this is the case a **Plug of Gauze**, or the application of the **Galvano-Cautery** at a dull red heat to the bleeding point usually controls it; but the following method and remedies are of service when the former are not available or when the hæmorrhage comes from some spot not visible¹:—

R. Corrosive Sublimate	gr. i		Ergotin	grs. 30
Dilute Hydrochloric Acid			Simple Syrup	ʒij
Tinc. of Can. Indica	ʒā ʒij		Infusion of Quassia	ʒviiij

Three large teaspoonfuls of this solution may be taken each day in a glass of water.

Hutchinson² has never known plunging the hands and feet into very hot water fail, whilst Rendu³ advocates a mixture of **Antipyrin**, gr. 7½; **Tannin**, gr. 15; **Sugar**, 5ij, given frequently.

Gellé⁴ uses **Peroxide of Hydrogen** both in this complaint and in hæmorrhage due to operative procedures in the nose. A plug of wool saturated with the solution is lightly plugged into the nose in spontaneous hæmorrhage; it may be left twenty-four hours, but in other conditions five minutes suffice.

REFERENCES.—¹"Therap. Gaz.," June 1, 1896; ²"Arch. Surg.," 1896; ³"Wien. med. Blatt.," Dec. 24, 1896; ⁴"Arch. Int. de Laryng. Otol. and Rhin.," Tome ix., No. 5.

ERYTHEMA MULTIFORME.

T. Colcott Fox, M.B.

Von Düring¹ points out that the class of erythemata is not in any way distinctly circumscribed. The group of E. multiforme is extremely confused and only united by certain external, and perhaps clinical, analogies, but differing etiologically in their clinical evolution (benignity, malignity, complications).

Taking the group E. multiforme in its widest sense, he classifies its constituents as follows:—

(I.).—*a. E. exsudativum multiforme* (Hebra) is a general malady *sui generis*, well characterized in its causes, its lesions, its symptoms, its course, its duration, and its issue. It is an acute, infective, and probably non-contagious malady, with a special symptomatic exanthem tending to multiformity, attacking by preference young subjects, appearing everywhere sporadically; but in some countries, *e.g.*, European Turkey, epidemically, especially in spring and autumn.

β. E. nodosum is a general malady *sui generis*, acute, infective, probably contagious, exanthematic.

(II.).—*Angioneuroses* (Eryanthemata of Auspitz and Unna). Here must be arranged provisionally a numerous series of urticarial and maculo-papular affections which resemble the infective maladies. The symptoms have many features in common, but etiologically and in their physiological mode of development they are absolutely heterogeneous. Here are included the toxic erythemata provoked by aliments and certain medicaments, the secondary toxic erythemata of cholera, typhoid, etc. Possibly they should be grouped with III.

(III.).—*Erythematous eruptions provoked by embolism* mostly arising in septic processes, malignant. They are secondary metastases in the skin.

In the discussion on the subject at the International Congress of Dermatology in London, 1896, Veiel, who opened the discussion, gave it as his opinion that E. multiforme (Hebra) was an infectious

disease, distinct from *E. nodosum*, in no way connected etiologically with gout or rheumatism, and brought about not by intermediary angio-neurotic influences, but due to an inflammatory process in the skin caused by some locally infective material. Stephen Mackenzie on the other hand very ably represented the older school of thought in a contribution from the clinical side, in which he maintained the close relation of many erythemata with rheumatism. He pointed out that four females were attacked to one male, and that the incidence of the disease was by far most frequent in the second and third decades of life. In 19 per cent. of two hundred and thirty-three cases of *E. nodosum* there was evidence of distinct articular rheumatism. About 35 per cent. of fifty-four cases of *E. multiforme* showed evidence of acute or subacute rheumatism. This is taking the criterion of rheumatism as actual arthritis only. The subject is complicated by the want of an exact knowledge of what rheumatism is; and of the simulation of what we call rheumatic fever, by many toxic processes.

REFERENCE.—¹ "Archiv. f. Derm. u. Syph.," 1896.

ERYTHRO-MELALGIA (Red Neuralgia, Weir-Mitchell).

T. Colcott Fox, M.B.

We call attention to an article by Dr. W. Prentiss, of Washington, on two cases of this malady, which is characterized by recurrent paroxysms of burning pain with tenderness and purplish red swollen areas of the extremities. Prentiss enters into an interesting discussion of the differential diagnosis and the treatment, and appends a full bibliography which will be of great assistance to many.

He gives the treatment thus :—

(1.) That of the general health, neurasthenia, nervous dyspepsia, and hysteria especially.

(2.) The relief of pain. **Phenacetin** protected by **Caffein**, and **Cannabis Indica** and **Belladonna** may be useful in various degrees. The violent paroxysms of pain call for subcutaneous injection of **Morphia**. Rest in bed and cold applications are palliative. **Liquor Arsenicalis** and general treatment cured Wendel's case.

(3.) Surgical treatment. Weir-Mitchell had two cases treated by exsection of some nerves and stretching of others. One case was successful, in the other gangrene led to a fatal result.

Lewin distinguishes three forms : (1,) Symptomatic of central structural changes, as in tabes, progressive paralysis, myelitis, etc. ; (2,) Symptomatic of central functional maladies, as hysteria and neurasthenia ; (3,) Idiopathic.

Pospjelow describes erythro-melalgia, or, as he prefers to call it, *œdema cutis acutum circumscriptum dolorosum*, as a symptom of gliomatosis of the spinal cord.

REFERENCE.—“Med. Rec.,” July 10, 1897.

EXOPHTHALMIC GOITRE.

R. Lake, F.R.C.S.

ETIOLOGY.—R. G. Curtin¹ summarizes the etiology and prevention of this disorder thus: (1,) It is hereditary; (2,) The marriage of people with the hereditary taint should be discouraged; (3,) Such people should live at an altitude of at least five hundred feet; (4,) They should avoid excitement; (5,) Should not live on limestone formation; (6,) Or in malarial district; (7,) Nor where the disease is common; (8,) They should avoid all things tending to produce anæmia; (9,) Also excessive study and the like.

TREATMENT.—Gayet,² amongst others, reports very favourably on Jaboulay's method of treatment,³ that of division of the cervical sympathetics. The advantages this presents over previous methods are that sometimes the portion left in incomplete thyroidectomies enlarges; hyperthyroidization sometimes occurs; exothyropexy or exposure of the thyroid rarely relieves the exophthalmos; ligation of the thyroid arteries is difficult, whereas action of the sympathetic powerfully affects the triad of symptoms, and is not difficult. The operation is performed by means of an incision, made almost the whole length, and parallel to the posterior border of the sternomastoid. After division of the deep cervical fascia, the internal jugular, carotid, and pneumogastric are drawn forward, and the grey cord of the cervical sympathetic exposed and the ganglia removed with or without division of the trunk of the nerve; the same operation is done on both sides.

Reclus⁴ reported another case with a complete cure by this method.

With respect to other procedures, Sänger⁵ first gives the accompanying figures, collected by different authors, of operations for relief of the symptoms:—

Date.	Reporter.	No. of Cases.	Died.	Cured.	Improved.	Others.
1896	A. Starr	190	23	74	43	
1896	F. Kinnicut	187	7 %	30 %	—	3
1896	E. Mattiesen	117	19.1 %*	47 %	33.7 %	

* Termed “Bad Results.”

Of course many cases appear in each table, but the writer pronounces against the operation of partial extirpation as of doubtful value. The writer has reported one cure after partial removal, but since has had a case die on the table.

Mammack⁶ finds **Thymus Tablets** very satisfactory in the treatment of this disease, as does S. Solis-Cohen,⁷ who has treated twelve cases of well-marked disease. He considers thymus acts as an antitoxin, counteracting exciting influences. He at the same time reports not unfavourably on the use of **Adrenal Extract**. Spencer⁸ revives the **Galvanic Treatment**, stating that the current used can be very weak, a fact proved by Wolfenden years ago ; in fact, in no other disease is the surface resistance to electricity so low as in this.

REFERENCES.—¹"Internat. Clin.," vol. iv, Ser. vi, p. 78, 1897 ; ²"Lyon méd.," No. 30, 1896 ; ³Ibid., Feb. 7, 1897 ; ⁴"Presse méd.," June 23, 1897 ; ⁵"Munch. med. Woch.," April 6, 1897 ; ⁶"New York Méd. Journ.," July 3, 1897 ; ⁷"Journ. Amer. Med. Assoc.," July 10, 1897 ; ⁸"Med. News," Nov. 28, 1896.

EXOSTOSIS. (See "Nose.")

EYE (Diseases of). (See also Special Articles ; for Defects of Vision see "Vision.") *William Oliver Moore, M.D., New York.*

New Method of Mounting Ophthalmic Specimens.—Priestley Smith¹ says mounting ophthalmic specimens in glycerin jelly has certain drawbacks.

Formalin solution, which is such a good hardening agent, is also a good preservative. The fluid employed is a 10 per cent. solution of formalin ; that is, 1 part of "formalin" as sold in the shops, to 9 parts of water ; for permanently mounting the water should be perfectly boiled and cooled, in order that it may contain no air. If this precaution is neglected, air bubbles will soon appear in the jar. A jar is completely filled with de-aërated formalin solution.

X-Ray in Eye Surgery.—Fridenberg,² after a *résumé* of the whole question of the Roentgen ray, says, to sum up the practical points in which this method modified and improved upon the older ones, and which are of importance if radiography is to be of any value in this branch of clinical diagnosis, the following facts are evident. The whole extent of the *eye and orbit* is included in the skiagraph. Two views at right angles to one another are taken for purposes of combination. In the one, the closest possible approximation to the eye is effected by having two plates bandaged to the eye. The shadows thrown by the bones of the skull are eliminated as much as possible by extreme over-exposure. When for any reason we cannot obtain the views, we may be able to dispense with the profile picture and to compute the distance of the foreign body from the plate by a calculation, in which the known factors are the diameter of the body itself, that of its shadow picture, and the distance from the sensitive plate to the Crooke's tube. The X-rays diverge from the focal point of origin and

produce a central projection of shadows, as do light rays coming from a finite distance. The same optical law holds good for both.

De Schweinitz³ reports finding steel in the ciliary body located by means of Roentgen X-ray. In commenting on the case he says it is evident that the dark spot seen dimly through the haze in the vitreous and located in the upper ciliary region was the foreign body, and that had the second electro-magnet operation, which was planted exactly in this position, been a little more persistent; or rather, had the magnet been more powerful, the foreign body might have been extracted. The confirmation by means of the radiograph of the situation of the foreign body, corresponding exactly to the position inferred from previous examinations, destroyed all hesitancy as to extensive operative procedures, with the result which has been stated, namely, the retaining of an useful eye, after the foreign body had been embedded in the ciliary body for twelve days, and had already started a cyclitis.

Sweet⁴ prefers the double film to the glass photographic plate on account of the flexibility and lightness, and because mistakes of diagnosis incident to imperfections in one film or plate were avoided. Two exposures were made with the Crooke's tubes—one with the tube on a line with the eye, and one at an angle of 25 degrees with the horizontal plane. The approximate position of the foreign body was determined by attaching the apparatus to an upright support and so placing a lighted candle that the shadow cast by the indicators would fall like those thrown by the Crooke's tubes. A small object was then held before the candle in such a position that its shadow was coincident with that of the foreign body. A record having been made of this line of shadow, the candle was moved until the shadows of the indicators corresponded to those on the second negative. The object was again employed and a second impression recorded. Where the two lines of shadow of the test object curved should be the situation of the foreign body in the eye. Knowing the distance of the centre of the cornea from a fixed point of the apparatus, one could measure the distance at which the foreign body in the eye lay behind this point, and thus ascertain its approximate position.

GENERAL THERAPEUTICS.—Burnett⁵ says most excellent results have been obtained from **Formalin** in infecting ulcers of the cornea and purulent conjunctivitis. The corneal ulcer can be touched with a solution of 1 in 200 or 1 in 500 once daily, and a collyrium of 1 in 1000 or 1 in 2000 employed as a general antiseptic. Serpiginous ulcers, treated with formalin, heal more promptly than by the older methods of treatment. Formalin has the great advantage of not dulling the

edges of fine instruments. The drug is a 40 per cent. watery solution of formaldehyde.

Dolganoff⁶ uses a 1 per cent. solution of the hydrochlorate of **Eucaïn**, and after the instillation of 3 drops anæsthesia is complete in one and a half minutes, and lasts thirteen, or on an average eight minutes. The cornea becomes anæsthetic, first the ocular conjunctiva, and finally the palpebral. Sensation is recovered in the reverse order.

The drops cause *great pain*, with conjunctival injection, which may be accompanied by oedema. The pupils for the most part remain unaffected; in some contraction, and in others dilatation took place. Atropin dilates the pupil more quickly if the eye is previously eucanized.

On the *accommodation* eucaïn has no effect; the intra-ocular pressure on the whole falls somewhat. Under the influence of eucaïn, diffusion from the surface of the eye into the anterior chamber (as tested by the colorimetric method) occurs from four to eight times more energetically than without it.

Silex⁷ says that it is much less toxic than cocain, and will withstand a great amount of heat without decomposition, and hence may be sterilized by heat without losing its properties. Eucaïn is the hydrochlorate of benzoyle-vinyl-diacetonalkamine.

Carter,⁸ having read a paper by Deneffe, of Ghent, on the new anæsthetic, **Holocain**, used a 1 per cent. solution, making four applications to the eye during one minute; at the end of four minutes an operation for the extraction of cataract was performed with iridectomy; the anæsthesia was complete, the pain of the iridectomy being hardly noticed. The healing of the wound was perfect. Other operations upon the eye were performed with equally good results. Deneffe describes holocain as an effective anæsthetic, and claims for it many advantages over cocain. There is no change in the diameter of the superficial vessels, nor dilatation of the pupil, or any effect upon the accommodation. These results are constant.

Gutmann⁹ mentions an additional advantage, that it does not act injuriously upon the *corneal epithelium*. He further states that it cannot be used *hypodermically*, being actively poisonous; nor sterilized in vessels of alkaline glass, as it becomes turbid when heated in them. He advises that it should only be heated in porcelain vessels.

Oliver¹⁰ says a single instillation of $\frac{1}{450}$ grain of **Scopolamin** produces mydriasis in eighteen minutes, and full ciliary paralysis in twenty-three minutes; in every instance the pupil is fully dilated. The total ciliary paralysis and pupillary dilatation are maintained for twenty-four to thirty-six hours; the diameter of the pupil returns to the normal

size in seventy-two hours, the accommodation in ninety-six hours. The early and complete paralysis of the ciliary muscle that can be obtained by the single instillation of $\frac{1}{480}$ grain, and the rapid and full return of the action of the muscle, make the drug in this amount the most efficient and valuable *cycloplegic* that can be used for the determination of refractive errors. The comparatively rapid return of the pupil to normal width proves the drug to be less objectionable than other mydriatics. The freedom from injurious constitutional effects when the above amount is used renders the drug perfectly safe.

REFERENCES.—¹"Amer. Journ. Med. Sci.," April, 1897; ²"New York Med. Rec.," May 15, 1897; ³"Amer. Journ. Med. Sci.," May, 1897; ⁴"New York Med. Journ.," April 17, 1897; ⁵"Clin. Journ.," Dec. 23, 1896; ⁶"Klin. Monatsbl. f. Augenh.," Feb. 1897; ⁷"Amer. Med. Surg. Bull.," May 10, 1897; ⁸"Lancet," May 29, 1897; ⁹"Berl. klin. Woch.," April, 1897; ¹⁰"Therap. Gaz.," Jan. 15, 1897.

EYE (Wounds of).

William Oliver Moore, M.D., New York.

De Schweinitz,¹ in wounds of the *sclero-corneal junction* with *prolapse of the iris*, recommends thorough sterilization of the conjunctival cul-de-sac. If recent, replacement of the iris with a probe; or if unsuccessful, its abscission in the same way as in the operation for iridectomy; careful coaptation of the wound edges, and when there is gaping, the insertion of delicate silk sutures through the conjunctiva or sclera. The use of **Atropin Sulphate**, and the continuous application of **Iced Compresses**; together with the administration of small doses of **Calomel**, $\frac{1}{6}$ of a grain every two hours. Attention should be particularly directed to sympathetic inflammation of the opposite eye.

REFERENCE.—¹"Phil. Polyclin.," April 17, 1897.

EYE-LID (Diseases of).

William Oliver Moore, M.D., New York.

Blepharitis.—Landolt¹ advises the following ointment:—

R	Neutral Acet. of Lead	gr. 2		White Vaseline	gr. 45
	Hydrochlor. of Cocain	gr. 3			

To be applied to the edges of the inflamed lid.

De Schweinitz² recommends first the correction of the refractive error; second, the relief of any co-existing *intra-nasal* affection; third, the application to the lid edges according to the type of the inflammation.

If of a seborrhœic type, first the removal of the scales by means of an alkaline wash or a solution of **Chloral**, 5 grains to the ounce, then the application of an ointment of **Milk of Sulphur**, 3 per cent., to which may be added 3 per cent. of **Resorcin**.

If of the eczematous form, remove crusts by alkaline lotion, then apply an ointment of **Aristol**, 10 grains to the ounce, or the **Yellow Oxide of Mercury**, 1 grain to the drachm.

If of the acne-like type, the sulphur salve above mentioned may be used. In chronic hypertrophic blepharitis thorough epilation of the lashes is advisable, and the ulcerated edges touched with **Silver Nitrate**, 10 grains to the ounce of water, or the method of Despagne may be used, namely, anointing the lid margins with a solution of **Mercuric Bi-chloride**, 1 to 100 in glycerin, being careful that the solution does not enter the conjunctival cul-de-sac.

In cases of marginal congestion, without scales or crusts, ointments are of little value; and a fine spray or douche of water, 60° F., to which a few drops of **Alcohol** have been added is valuable.

Furuncles of the Eye-lid.—Landolt and Gigax,³ for stubborn cases advises the following formula:—

R	Tinct. of Camphor,		Rose Water	āā gr. 150
	Precip. Sulphur	āā gr. 15	Gum Arabic	gr. 3
	Lime Water			

M. To be painted on the lids once a day.

Diagnosis of Chalazion.—Panas⁴ calls attention to certain errors made in the diagnosis of chalazion when accompanied by acute symptoms. It is to be differentiated from indurated chancre, hordeolum, and if on the upper lid, from inflammation of the palpebral portion of the lachrymal gland.

At the commissure, where the chalazion is small and accompanied by the swelling of the lids and chemosis, it may be mistaken for tenonitis. The chronic form is to be differentiated from gumma, tuberculosis, etc., of a meibomian gland.

New Operation for Ectropion.—Hotz⁵ treats *cicatricial ectropion* by liberating the cicatrix in the usual way, only making a liberal large, somewhat circular incision which extends up to the eyebrow. The upper margin of the cicatricial skin, which is thus liberated, is attached to several points by suture to the upper margin of the tarsus; special stress is laid on this point, for if thoroughly done it entirely prevents the lid from being again drawn up. The part left *bare* above the tarsus is covered either with a skin flap cut from the neighbourhood, or by Thiersch's grafts; the cicatricial skin does as well as healthy skin for transplantation.

REFERENCES.—¹“Rev. de thérap. méd. chir.,” Jan. 15, 1897; ²“Phil. Polyclin.,” Oct. 24, 1896; ³“Wiener klin. Rundsch.,” Sept., 1896; ⁴“Presse méd.,” Ann. iv., No. 104; ⁵“Glasgow Med. Journ.,” March, 1897.

EYELIDS (Burns of).

Synopsis.—(Vol. 1897, p. 168.) Slight cases, Carron Oil or Bismuth powdered, or ℞ Cocain Hydrochlor., gr. 45; Lanolin, gr. 75; Vaseline, Aq. Dest., āā gr. 300. M. For second degree, ℞ Cocain Hydrochlor., gr. 23; Salol, gr. 45; Vaseline, gr. 375. M. Or, ℞ Iodoformi, gr. 60; Ext. Conii, gr. 30; Ac. Carbol., gr. 0.75; Ung. Rosæ, gr. 450. M. Open blisters before applying the above.

FÆCES (Impaction of).

Herbert W. Allingham, F.R.C.S. Eng.

Dr. Manley¹ has written an interesting paper on fæcal impaction in the ano-rectal space. He points out the necessity of making a thorough physical examination, not the mere administration of an enema or a cathartic, in all cases of rectal inertia attended with persistent constipation. He emphasizes the need of determining in men with bladder troubles whether there is any fæcal impaction in the lower rectum; and in the case of women he shows how uterine troubles may give rise to symptoms of fæcal obstruction, and *per contra* how fæcal impactions may lead the unwary to imagine the presence of ovarian or uterine diseases.

REFERENCE.—¹"Therap. Gaz.," Oct. 15, 1896.

FEYERS. (See also special articles.)

W. Gilman Thompson, M.D., New York.

George M. Sternberg,¹ surgeon-general U.S.A., presents an admirable and comprehensive discussion of the etiological factors concerned in the various infections, especially malaria, yellow fever, and various skin diseases.

His classification recognizes the following divisions:—

I.—"Based upon mode of infection: (*a*,) Traumatic infections; (*b*,) Infection by contact (direct contagion); (*c*,) Infection through ingesta; (*d*,) Infection through the respiratory tract.

II.—"Based upon the nature of the infectious agent:—

(1,) Diseases due to infection by vegetable parasites: (*a*,) Schizomycetes (bacteria); (*b*,) Hypomycetes (microscopi fungi); (*c*,) Blastomycetes (yeasts).

(2,) Diseases due to infection by animal parasites; (*a*,) Protozoa; (*b*,) Nematodes; (*c*,) Trematodes; (*d*,) Cestodes; (*e*,) Acari.

III.—"Based upon the special tissues or organs involved: (1,) General blood infections; (2,) Localized infections."

Serum Diagnosis.—By far the most interesting bacteriological work of the year centres in the study of the Widal² test, by which the blood serum, derived from man or animals suffering from various acute specific fevers, is shown to check motility in certain bacteria. The most brilliant results have been achieved with glanders and typhoid serum (see "Typhoid Fever").

A. E. Wright,³ of the Army Med. School, Netley, describes the technique. A drop of blood may be used, taken from the patient's finger, or clear serum is drawn by a small fly blister. This is divided upon glass slides and diluted five, ten, twenty-five, fifty and a hundred-fold, in various samples. A drop of a culture of bacilli in active motion is then added to each sample, and in five to ten minutes the bacilli are seen to become massed in clumps—"agglutinated"—while their motion becomes gradually feeble, and finally ceases permanently. Thus, M'Fadyean has shown that serum from a case of equine glanders causes agglutination in bouillon cultures of the glanders bacillus, and G. R. Foulerton⁴ has demonstrated the same test in a case of human glanders in a 1 in 20 dilution of the serum. He says: "Agglutination of the glanders bacillus can be brought about by contact with (1,) A serum from a case of active infection by the glanders bacillus; (2,) Serum from a case of active infection by the typhoid bacillus; and (3,) Serum from a horse immunized against the diphtheria bacillus."

Albert S. Grunbaum⁵ discusses "Method in Serum Diagnosis," claiming that in true enteric fever the reaction may always be obtained during some phase of the disease, in a 1 in 32 dilution of blood serum.

Exanthemata.—The accidental or complicating rashes occurring in small-pox, varicella, enteric fever, scarlatina, and measles, are described by Meredith Richards,⁶ of Chesterfield. They are mainly erythema, urticaria, petechial, papular and miliary eruptions. Of these, the erythemata occasion most confusion in diagnosis, being also caused by many different drugs. The rashes which precede the true infectious exanthems are particularly puzzling.

The same topic is discussed by Bernhard.⁷ He groups these rashes under three forms: (1,) Red macules, becoming confluent and appearing from the tenth to the twenty-first day; (2,) The common macules, appearing in streptococcus secondary infections. These occur over the joints, about the knees, etc., and spread centripetally. They appear at the end of the second or beginning of the third week; (3,) Scarlatiniform redness. This is seen earlier than the other forms, and is more apt to be accompanied by elevation of temperature.

Heitzman⁸ describes a pyosepticæmic exanthem simulating variola. A scarlatiniform rash was followed by pustules, petechiæ, ecchymoses, sudamina, and small dermic abscesses.

Hyperpyrexia.—H. A. Hare,⁹ of Philadelphia, endorses **Cold Bathing**, and says that "the antipyretic drugs possess little value in comparison."

REFERENCES.—¹"Wesley Carpenter Lect.," before the New York Acad. of Med., Dec., 1896; "Amer. Journ. Med. Sci.," Dec., 1896; ²"La Presse méd.," 1896, p. cclvii; ³"Brit. Med. Journ.," Jan. 16, 1897; ⁴"Lancet," May 1, 1897; ⁵"Brit. Med. Journ.," May 1, 1897; ⁶"Quart. Med. Journ.," Oct., 1896; ⁷"Münch. med. Woch.," 1896, No. 34; ⁸"Med. Rec.," Oct. 24, 1896; ⁹"Therap. Gaz.," Oct. 15, 1896.

FILARIASIS.

James Cantlie, F.R.C.S.

Mr. C. W. Young¹ records the clinical history and *post-mortem* appearances of a case of filariasis. The patient, an Englishman, born in Kingston, Jamaica, was the subject of lymph scrotum and varicose groin glands. The latter were removed in the summer of 1896, and in the month of September of the same year the pendulous scrotum was excised. During December, 1896, he was admitted to hospital (Charing Cross) with fever and malaria, and within a few days a small tumour formed on the back of the left forearm, which, when opened, showed a live female parent filaria, measuring three and three-quarter inches in length, and about the thickness of a horse-hair. On February 19, 1897, at 8.30 a.m., the patient committed suicide (prussic acid). At the *post-mortem* examination the thoracic duct was found enormously dilated to the size of a forefinger, the abdominal glands on the front and sides of the lumbar vertebræ formed a mass of varicose lymphatic tissue measuring one foot long, nine inches across, and three inches in thickness. In the lymphatics of the groin and cord, etc., seventeen female worms were unravelled, and one male, measuring one and a-half inches and thinner than the female worms, was met with. In view of the nocturnal habitat of this parasite, and as the patient died at 8.30 a.m., the opportunity was a favourable one for investigating the retreat of the parasite during the day.

Surgeon V. G. Thorpe² records the prevalence of filaria in the South Sea islands, and Dr. Davies sent a specimen from Samoa to Dr. Manson,³ who remarks, "that further investigation of the healthy adult population will bring out the startling fact that practically all adult Samoans harbour 'filaria nocturna,' or are the subjects of filarial disease."

REFERENCES.—¹"Brit. Med. Journ.," April 24, 1897; ²*Ibid.*, Oct. 3, 1896; ³*Ibid.*, Nov. 7, 1896.

FISSURE OF ANUS. (See "Anus.")

FISTULA IN ANO. (See "Anus.")

FRACTURES.

Priestley Leech, M.D., F.R.C.S.

Ambulatory Treatment of.—Dr. Fiske¹ read a paper on the ambulatory treatment of fractures of the leg. After the bones are in place a plaster splint was applied from the toe to near the knee, and

PLATE III.



Thomas knee-splint for ambulatory treatment of fractures.



Application of the apparatus completed splint reinforced by plaster bandage.

the patient was allowed to walk upon the limb from the second or even the first day in some instances, but in a few was kept in bed ten days. There was no padding beneath the splint but simply a roller bandage. Some starch is added to one of the three layers of plaster bandage to give slight elasticity. The foot was at right angles to the leg. Compound fractures are treated in the same way if there is no infection. The splint allowed of no motion between the fragments while the patient was walking about. Fractures of both tibia and fibula had been treated in this way in the Roosevelt Hospital.

The advantages of this treatment are, there is less stiffness of adjacent joints, the period of after treatment is considerably shortened, and the general health of the patient is maintained.

Of fifty-six cases of Pott's fracture the ambulatory splint was applied in thirty-eight instances during the first twenty-four hours; in eighteen cases the case was applied from three to twenty-one days after the injury. Where both tibia and fibula are fractured much more care is needed in putting the plaster on, and in any case a skilled assistant is needed.

Martin² uses the same treatment, but also strengthens the plaster by light steel rods, and says that ether should be used for reduction in the majority of cases.

Bradford³ says that Thomas, of Liverpool, was in the habit of treating fractures by the ambulatory method for many years previous to his death. Bradford has been in the habit of treating fractures of the lower leg in children by means of Thomas's splint combined with and without plaster of Paris bandages, and speaks warmly of this method (*Vide Plates III, IV*).

The means at our disposal for ambulatory treatment are: Plaster of Paris with crutches, the use of a Thomas or ring perineal splint, a hip traction splint, or, in cases of injury of the leg, a splint taking bearing upon the lower end of the femur.

In fractures of the leg in children it is difficult to obtain bearing on the condyles of the femur or the head of the tibia, owing to the undeveloped shape of the bones, and for this reason the Thomas knee-splint which takes its bearings from the perineum is especially advantageous in the ambulatory treatment in fractures of the leg in children. Where much deformity has taken place or where the fracture is in the upper third of the femur in children, recumbency in bed will be necessary for a longer period than where the fracture is lower owing to the shortness in children of the upper fragment. Where traction is required a ratchet windlass spindle can be attached to the bottom on

which the sticking-plaster straps attached to the leg can be wound, a counter extension being furnished by the perineal ring. A simpler though less convenient form of traction can be made by attaching buckles to the bottom of the splint and fastening into these buckles webbing attached to the adhesive plaster fastened to the leg. If this webbing is elastic a constant pull can be secured.

Delayed Union in.—Miller⁴ says his experience is that in many cases of fracture of the leg and thigh, when union seemed at a stand-still, congestion by an elastic bandage has in a week or fortnight brought about a firm union.

The way in which elastic pressure is applied is as follows : Select a convenient spot a little above the fracture point, a strip of lint is placed round the limb to protect the skin, and then two turns of an ordinary elastic webbing bandage. The amount of pressure should be regulated by the effect produced. The limb need not be markedly congested nor œdematous. In most cases it is advantageous to support the part of the limb distal to the fracture with a firmly and evenly applied bandage. The pressure is applied in the morning and removed at night. This method of treatment is not equally applicable to cases of ununited fracture.

Movement and Massage in.—Davis,⁵ of Philadelphia, in an article on this subject comes to the following conclusions : (1,) **Massage and Passive Motion** is not used to the extent that it should be in the treatment of fractures ; (2,) Immobility of the fractured ends favours quick union with little deformity ; (3,) There are some cases in which, owing either to peculiarities of the fracture or impaired constitution of the individual, the tendency to the formation of callus is marked. Motion in these cases tends to the formation of exuberant callus and deformity ; (4,) Where bony union is unduly delayed, disturbance of the fractured ends in these hinders union ; (5,) It is wise to wait until the fractured parts are glued together, usually eight or ten days, before attempting any except the lightest massage, and any extensive passive motion after that time should be used carefully but diligently ; (6,) Passive motion and massage when first attempted should be of the most gentle character, and not so violent as to disturb the relation of the broken bones ; (7,) Any marked pain and inflammatory reaction following passive motion and massage is evidence that it has been too violent ; (8,) The limb should receive massage and manipulation at each inspection or change of dressing, often daily ; (9,) In some cases it is advisable to administer such massage as is possible without removing the splints ; (10,) Persistent stiffness, especial'y in fractures or injuries of the wrist,

PLATE IV.



Application of the splint to a fracture of the femur.

is often due to a rheumatoid affection locating itself on the injured region. Massage is valuable in such cases ; (11.) Such dressings and methods of treatment should be adopted as will allow of the greatest use of massage and passive and active movements consistent with proper retention of the fragments.

Dr. Woolsey⁶ has used massage in fractures for a year, and the results had been so good that he has come to make it the routine treatment in fractures near joints ; he applied it daily for fifteen minutes until consolidation occurred. In fractures near the middle of the limb he immobilizes and lets the patient get about on crutches. Under this treatment the callus is stronger, the muscles are kept from atrophy, the pain is relieved and the swelling diminished, and secondary œdema was conspicuous by its absence.

Fevrier⁷ speaks very favourably of massage. In carrying it out the hands of the masseur should be surgically clean, and sterile vaseline used as a lubricant. The first day longitudinal rubbing is practised, avoiding the seat of fracture ; circular rubbing is indicated on the following days. The thumbs and the palms of the hands are not employed until the fourth and fifth day. Passive motion is practised at the neighbouring joints ; it should be practised for twenty minutes.

Dragon⁸ publishes the results of massage applied to twenty cases of fracture of the clavicle under the care of Lucas-Championnière. He practises a daily massage, not only at the seat of fracture, but also of the adjacent joints and muscles, and insists particularly on massage of the deltoid muscles, and careful movements, both active and passive, of the shoulder. In the intervals the upper limb is supported by a sling. At the end of three weeks the patient when treated in this manner is able to use the limb freely ; the main object of such treatment is to prevent articular rigidity, and to preserve the full muscular functions.

Miller⁹ says that not only is stiffness of the ankle and knee prevented in fractures of the lower limb treated by massage, but that the fracture unites sooner. The massage may be commenced immediately after the injury or it may be delayed a day or two or even a week, but the earlier it is begun the better. Though the union takes place early Miller thinks it is not firm enough to bear the weight of the body, but time is saved after all mainly by prevention of stiffness of the ankle joint.

Fractures about the Elbow Joint.—Dr. Bruce¹⁰ calls attention to the deformity that very often follows on fractures about the elbow joint. He suggests that the cause of the mass of callus usually seen in these cases is bad coaptation of the ends of the broken bones and

want of proper rest when these fractures are set. An anæsthetic should be used for diagnosis or to facilitate reduction, or both. As regards splints he thinks they are not needed. He simply reduces the fracture, bends the elbow to an acute angle and lays the arm across the chest over a thickish sheet of cotton wool. Then apply a bandage, enveloping the trunk and injured limb, or fasten them together by adhesive plaster. Every day open out and carefully examine the fracture. By-and-bye flex and extend the joint a little, and later on use gentle massage. The result will be, as a rule, satisfactory.

Fractures of the Neck of the Femur in Childhood. — Royal Whitman¹¹ discusses this subject. In childhood a careful physical examination is the only reliable evidence of the presence or absence of disease or injury. This injury in childhood is often mistaken for hip disease, and Whitman thinks that fracture of the neck of the femur is not an uncommon accident in children. As regards the immediate diagnosis, there is evidence of injury about the hip, elevation and projection of the trochanter, change in contour and shortening and eversion of the leg ; but as the patients may walk about in a few days after the accident it would seem that the injury has been a green-stick fracture or impacted fracture, and thus the diagnosis may be overlooked. Subsequently the limp, the pain referred to the hip and knee, and the pain and restriction of motion at the seat of the injury might be mistaken for signs of disease. Another point is that the child is perfectly well until it receives a severe injury which confines it to bed for several days or weeks ; the onset of tuberculous disease is on the contrary slow and irregular.

In from three weeks to six months after the injury physical examination shows a change in the contour of the affected side caused by elevation and prominence of the trochanter, a shortening of the leg, and usually eversion of the foot. Such signs, if they were the result of disease, are an evidence of an advanced stage of upward enlargement of the acetabulum or of partial destruction of the neck of the bone, conditions that would inevitably be accompanied by the evidence of local disease, by restriction of motion and deformity of the limb. In fracture such signs are absent. During the early stages of repair in fracture motion is restricted, but not in all directions as in tuberculous disease ; it is particularly marked in flexion, abduction and inward rotation, corresponding to the direct effect of the depression and backward displacement of the neck of the bone. He thinks that fracture is more common than separation at the epiphysis, and says this latter is a rare injury.

The great danger to be apprehended as a remote result of the accident is increased shortening and disability due to a further descent of the depressed neck of the femur. Whitman suggests the rectification of the deformity by forcible manipulation at the time of the accident. In the later stages division of the neck or sub-trochanteric osteotomy might be done, but the result is unlikely to be favourable.

Fracture of the Zygomatic Arch.—Matas¹² describes a simple method of treating fractures of the zygoma. He passes a full curved Hagedorn needle through the skin in the temporal fossa down behind the fragment, and then out again below it. A silk thread is by this means carried round the displaced bone, and this in turn serves to convey a silver wire along the same course. By outward traction the fragment is replaced. To prevent it from dropping back again the wire is temporarily tied over a glass slide which rests on a piece of gauze placed over the unbroken extremities of the zygoma, and the whole is secured by a collodion dressing. On the next day the glass slip is replaced by a vulcanite splint carefully moulded to the bone.

Ununited Fracture.—Dr. Edward Martin¹³ treated a case of ununited fracture of the humerus by metal plates. There was shortening of an inch, slight overlapping and a flail-like utterly useless arm. A silver plate was moulded to fit a humerus of medium size, six screw holes were punched in it, the bone was cut down upon its ends, freshened and apposed as nearly as possible, and the plate secured in place by ordinary carpenters' steel screws. Perfectly firm union took place.

Dr. White treated a similar case which had been previously twice wired in a like manner; six weeks later the plate was removed and the arm put up in plaster. A perfect result was obtained.

REFERENCES.—¹"Med. News," Feb. 13, 1897; ²"Med. Rec.," Feb. 6, 1897; and ³"Therap. Gaz.," April 15, 1897; ⁴"Philadelphia Polyclin.," Jan. 2, 1897; ⁵"Annals of Surg.," Oct. 1896; ⁶"Practitioner," March, 1897; ⁷"Annals of Surg.," Dec. 1896; ⁸"Med. Rec.," March 20, 1897; ⁹"Rev. méd. de l'Est," p. 385, No. 13, 1896; ¹⁰"Epit. "Brit. Med. Journ.," March 20, 1897; ¹¹"Practitioner," March, 1897; ¹²"Brit. Med. Journ.," Oct. 24, 1896; ¹³"Annals of Surg.," June, 1897; ¹⁴"New Orleans Med. and Surg. Journ.," Sept. 1896, quoted in "Practitioner," Jan., 1897; ¹⁵"Annals of Surg.," Sept. 1896, pp. 383 and 384.

GALL-BLADDER.

A. W. Mayo Robson, F.R.C.S.

Gall Stones in the Common Bile Duct.—It is not many years since the diagnosis of cholelithiasis rested on the presence of jaundice subsequent to pain in the region of the gall-bladder. Recent experience has, however, shown that in by far the greater number of cases of cholelithiasis, the symptoms become so severe as to necessi-

tate intervention before gall-stones reach the common duct, and therefore, before jaundice supervenes. The symptoms and the treatment of cases before and after the concretions have reached the "ductus communis" differ so much, that the subject of gall-stones in the common duct may be advantageously considered separately, especially as opinions on the treatment of the condition vary considerably.

Courvoisier estimates these cases at 4 per cent., but according to my experience in over two hundred operations on the gall bladder and bile ducts, gall-stones are found in the common duct in quite 20 per cent. of cases.

For convenience of description the common duct may be divided into three portions: the hepatic portion nearest the liver, the duodenal portion under cover of the duodenum, and the middle portion where the duct is most easily seen and reached.

Courvoisier states that there is only one concretion present in two-thirds of the cases, but according to my experience multiple gall-stones in the common duct are more frequent than solitary ones. The duct may be contracted around the concretion, or as is frequently noticed, the passage may be considerably dilated when the gall-stones may float freely in the duct and act like a ball valve, thus accounting for the remittences of the jaundice in many cases although the concretion has not passed into the bowel.

Fenger explains the contracted condition of the gall-bladder, which is almost universally found in cholelithiasis, to this floating of gall-stones in the ducts; but, as the same condition occurs where the gall-stones are fixed, this explanation must only be a partial one.

In my paper before the Clinical Society in 1888, and again on page 82 of my work on gall-stones, published in 1892, I drew attention to this contraction of the gall-bladder as an important diagnostic point, and this has been borne out by other observers independently. I then remarked that jaundice with distended gall-bladder was presumptive evidence in favour of malignant disease, but that jaundice without distended gall-bladder favoured the diagnosis of cholelithiasis.

Of thirty-five operations for obstruction in the common duct, Courvoisier found that eighteen were due to causes unconnected with gall-stones, such as cancer, stricture or tumour; out of these, the gall-bladder was dilated in sixteen, whereas only seventeen were dependent on gall-stones, and out of these seventeen the gall-bladder was atrophied in thirteen.

Whilst Fenger's explanation is not all-sufficient to account for this contraction of the gall-bladder, neither does that given by Courvoisier fully explain it. He says the contraction is due to chronic inflam-

mation of the walls of the gall-bladder set up by the stones when in it, before they passed into the ducts. This cannot account for all cases, for in some the gall-stones have never been in the gall-bladder, having been formed in the hepatic or common ducts. I think the explanation is due to a combination of causes :—

(1,) All cases of cholelithiasis are accompanied by inflammation of the walls of the biliary passages, as shown by the almost universal presence of adhesions around the gall-bladder.

(2,) Gall-stones in the common duct seldom cause complete obstruction, either because they are floating in the duct or because they only partially fill it ; there is therefore no sufficient backward pressure to cause dilatation of the gall-bladder.

(3,) The muscular coat of the gall-bladder, though feeble, is sufficient to enable it to contract, which it doubtless does in efforts of expulsion when there is any obstruction in the common duct.

(4,) The contraction, from being at first intermittent, becomes in the long run constant, and the accompanying inflammation fixing the contracted gall-bladder, it atrophies.

The special symptoms pointing to stone in the common duct are, jaundice with absence of enlargement of the gall-bladder, with frequent mild attacks of pain, followed by an intensification of the jaundice, which in many cases never quite disappears. The seizures are often associated with intermittent feverish attacks and loss of weight. The pain is in the epigastric rather than in the right hypochondriac region, and passes through to the right dorsal or lumbar, rather than to the infra-scapular region. Where jaundice is continuous and intense without much variation, especially if the gall-bladder be enlarged, there is usually malignant disease or some other cause than gall-stones. All the other symptoms characteristic of gall-stones may have been present for some time previously, or may co-exist with those above mentioned.

The treatment of a calculous obstruction in the common duct is of the utmost interest, both on account of the difficulties to be overcome and of the great importance to the patient, who in the greater number of cases, if not relieved, is condemned to a lingering and painful illness often ending in death.

Medical treatment, though uncertain and usually disappointing, should be given a trial, which, however, should not be too prolonged, as complications in the shape of infective or suppurative cholangitis may supervene, or cholæmia may lead to a condition closely allied to the hæmorrhagic diathesis, rendering operation much more dangerous.

Olive Oil administered by the mouth in its crude state or as an emulsion, or given by the rectum, is worth trying, and a dose of **Carlsbad Salts** in hot water, given the first thing each morning, has in some cases a decidedly good effect. For the relief of pain the injection of morphia may be necessary in the severe attacks, but in the milder seizures 20 to 30 drops of **Spirit of Æther in Chloroform Water** repeated every quarter of an hour, if needful, may be found to give sufficient relief.

These means failing, the question of surgical treatment will arise, and there are no less than ten methods open to the surgeon after opening the abdomen by the ordinary incision, oblique by preference, over the gall-bladder region :—

(1,) In a few cases a concretion of moderate size may be manipulated backwards into the cystic duct and thence extracted by scoop or forceps ; but it is seldom practicable on account of the contraction of the gall-bladder and cystic duct.

(2,) Occasionally a small stone may be pressed into the duodenum, but this is rare, and not infrequently it may be pushed into a dilated diverticulum of Vater and so be missed and the whole operation rendered futile.

(3,) Cholecystotomy with subsequent treatment by solvent injections is well worth bearing in mind, if the gall-bladder be not too much contracted, on account of its simplicity and safety, together with the certainty of giving immediate relief with a modicum of risk, and putting the patient in better condition for subsequent treatment should such be necessary. .

(4,) Cholelithotrixy, or crushing the stone *in situ*.

(5,) Needling concretions through the duct walls.

(6,) Choledochotomy, or incising the duct and removing the calculi.

(7,) Choledochoduodenotomy, or reaching the duct through the opened duodenum, for stones impacted in the duodenal end of the duct.

(8,) Cholecystenterostomy, or short-circuiting the obstruction.

(9,) Choledochenterostomy, or uniting the duct to the gut in case of largely dilated ducts.

(10,) Choledochostomy, or attaching the dilated duct to the surface and draining it.

It will thus be seen that the surgeon has a great variety of operations to choose from, and he will act the best, who knowing all, is able to choose that peculiarly adapted to the case in hand. The various operative procedures I propose to consider in detail.

Cholelithotrixy was first suggested and put in practice by Mr.

Lawson Tait, and has since been extensively and most successfully employed by him, by myself and others. The ordinary incision for cholecystotomy may be large enough, but if the patient be stout, or the ducts cannot easily be reached, it may have to be increased so as to allow the hand to pass into the peritoneal cavity, in order that the fingers may locate and grasp the stone *in situ*. If the right hand be used the thumb will enter the foramen of Winslow and the index finger will pass in front of the common duct, or in case of the left hand being used, these digits will be reversed, when the whole force of the opposing finger and thumb can be brought to bear on the concretion.

Usually the gall-stone flattens out into a wafer shape, and in altering the position of the digits, the edges of the wafer are compressed and the concretion is either converted into pulp or breaks into innumerable fragments which can be passed on towards the duodenum or subsequently washed through.

I have performed this operation thirty times, and have had no subsequent trouble on account of damage to the ducts.

In some cases of stones in the common duct, the concretions have been too hard to crush and I have had to perform choledochotomy.

The disadvantages of cholelithotripsy are : (1,) The fear of seriously damaging the ducts by manipulation ; and (2,) The danger of leaving fragments permanently in the passages, which may then grow by further deposit of cholesterolin.

The first danger need not be feared, if the finger and thumb only be used as the compressing force, but if attempts are made to crush hard stones by instrumental means, damage to the ducts may occur.

The question of *needling* impacted concretions by the passage of a needle through the walls of the duct was raised by my colleague, Mr. Teale, in 1895. In my work on "gall-stones," published in 1892 (p. 144), I referred to the subject, and Mr. Knowsley Thornton has employed it ; it was also fully discussed after a paper I gave at one of the Societies, and I think it was almost unanimously decided that, although concretions might be broken up by needling, the operation was inadvisable on account of the almost unavoidable damage to the ducts and the fear of infection.

It may, however, be borne in mind that some of the very hard stones may be broken up by means of a needle, and that the fragments may be further crushed between the finger and thumb.

The second danger of leaving fragments in the ducts may be overcome by at the same time performing cholecystotomy, and later syringing the ducts with sterilized water until they are clear of *débris*,

or if any fragments should be unavoidably left, by applying through the fistula some solvent solution.

In one case after cholecystotomy and the crushing of calculi in the common duct, the fragments did not pass until I injected a few drops of a solution of turpentine in æther into the fistula; great pain followed, the duct became patent and the fistula closed, the patient having remained well since. The result in this case was probably rather due to the contractions set up in the duct than to the solvent action of the remedy used, and I cannot, on account of the severe pain set up for some hours, recommend its employment, though in this case the result was good. A more efficient method, which I now employ whenever I have reason to think that any of the fragments remain in the ducts, or wherever I have deliberately left a gall-stone which I could not crush and did not think it wise to remove by choledochotomy, is to syringe a warm 5 per cent. solution of *sapo animalis* or warm olive oil through the fistula night and morning until the passages are quite free.

The olive oil and soap solution probably act in a double capacity as solvents and as lubricants.

Dr. Brockbank found that a gall-stone placed in a .5 per cent. solution of *sapo animalis* in distilled water and kept at the body heat in an incubator, lost 34 per cent. of its original weight in three weeks, and that a similar concretion in a 1 per cent. solution lost 14 per cent. of its weight in the same time.

Choledochotomy, or choledocholithotomy, is the name given to the operation of incising the bile ducts for the extraction of gall-stones in cases where the concretions cannot otherwise be removed. It was probably first suggested by Langenbach, in 1884, though Kinnmell (quoted by Fenger) stated, in 1890, that he several years before had performed cholecystectomy on a female patient of forty, after which he had removed a stone the size of a walnut from the common duct, through an incision which he afterwards sutured. The operation was a very prolonged one, and the woman died twenty-four hours after.

Courvoisier performed the first successful operation on January 22, 1890, and two others, both successful, in February and March of the same year. It has since been performed by Langenbach, Thornton, Fenger, Greig Smith, Page, Terrier, Symonds, myself, and others.

The cholecystotomy incision must be extended to 4 or 5 inches, and after the separation of adhesions the wound must be held open by a retractor on the right and preferably by an assistant's finger on the left, as the fingers can at the same time retract the pylorus and stomach on the left, and the colon and omentum below without

inflicting injury as retractors are apt to do. The assistant who is using the retractor on the right may with advantage use his left hand to draw upwards the over-hanging liver and costal margin. A sand-bag placed under the lower dorsal spine makes the region of the common duct more accessible.

The operator should now, after having separated adhesions, have a good view of the common duct within the free border of the lesser omentum, and on inserting his left index finger into the foramen of Winslow, or on grasping the duct between the index finger and thumb, he can without difficulty, bring the duct well within reach, the concretion making a distinct projection.

Over the prominent stone a vertical incision, as low down and as far forward as possible, should be made, sufficiently large, to allow the concretion to pass. Through this opening a probe can be passed or even a finger, in order to explore the ducts thoroughly, so as to remove other stones if present. To leave a small concretion may invalidate the operation, since as Courvoisier and, later, Fenger have shown, a small gall-stone may by its ball-valve action occasion repeated attacks of pain and jaundice.

The incision in the duct may now be closed by interrupted sutures in two layers: first, the muscular and fibrous coats being approximated; secondly, the serous margins; but if this be impracticable, the muscular and serous coats may be sutured together and additional Lembert's sutures may be applied over all.

I have found a rectangular cleft palate needle the most convenient instrument to employ, in applying these deep sutures, though doubtless a small circular intestinal needle and holder will answer equally well, or the special needles and holder suggested by Mr. Lane may be found more convenient.

If a gall-stone be felt in the hepatic duct it may be reached by opening the common duct and passing a scoop or forceps through this opening. Fenger has in this way explored the ducts and removed stones quite in the liver substance, and I have passed a long bent probe in this way quite into the primary division of the bile ducts.

Dr. Elliott recommends the application of the sutures before removing the stone. This is certainly an advantage, though if the ducts have to be explored afterwards the sutures are rather in the way. I think the same advantages may be obtained by introducing the two end stitches before extracting the calculus, as when they are drawn on the edges are approximated and more easily sutured.

A large drainage tube should be left in the abdomen, and it may be wise to gently pack iodoform gauze over the duct and to bring the

end out by the side of the drainage tube, if there be any doubt about the closure of the wound in the duct. The tube may be removed in twenty-four or forty-eight hours if there be only a little discharge, and the gauze should be gradually removed day by day until it is all away.

Mr. Knowsley Thornton has thought it advisable in some of these cases to insert a glass drain through a small opening above the pubes, but this plan has not been generally followed by others.

Drainage through a stab wound in the right loin is an efficient means for draining the discharge from a leaking gall-bladder or bile duct, since there is a distinct peritoneal pouch here, bounded above by the right lobe of the liver, below by the ascending layer of the transverse meso-colon covering the duodenum internally; externally by the parietal peritoneum, and internally by the peritoneum covering the right side of the vertebral column and passing up to the foramen of Winslow. Morison has found this pouch to be capable of holding nearly a pint before it overflows into the general peritoneal cavity, and he advocates drainage of this pouch and non-suture of the ducts, if there be any difficulty in securing the margins of the opening.

The late Mr. Greig Smith said that drainage is always advisable, and in this view I fully agree, as although in several of my cases there has been little or no discharge from the drainage tube, in others, the bile-stained discharge for a few days has proved that the closure of the opening was not perfect, and it must be borne in mind that, although the ducts appear to be clear it is impossible to be absolutely certain. A small gall-stone was found obstructing the orifice of the duct where it was opening into the duodenum. The same difficulty was experienced in one of Fenger's cases and in several of Kehr's.

Choledcho-duodenostomy is a term applied to the modification of the operation of choledochotomy, where a gall-stone is impacted in and removed from the diverticulum of Vater through an incision in the duodenum. McBurney, Pozzi, Kocher, and myself have performed this operation with success. The operation is difficult and should only be done where the gall-stone cannot be brought into the more accessible part of the common duct.

Statistics of Choledochotomy.—As this is perhaps the most difficult and prolonged of the operations on the bile ducts the mortality is necessarily greater than that of simple cholecystotomy. In 1892, Martig had collected twenty-seven cases, and in 1895, Mermann seventeen others, giving a total of forty-four cases with a mortality of 18 per cent. Terrier,¹ in 1892, had collected twenty cases with a mortality of 25 per cent. Hans Kehr² collected from various sources

eighty-four cases of choledochotomy with thirty-one deaths, equal to 37·8 per cent. Even excluding severe cases the mortality was 25 per cent. though in his own practice the death rate was only 6·6 per cent. He remarks, "The operation involves many difficulties which can only be overcome by one performing a large number of operations, and even then, it is not very easy to remove all the concretions."

Out of thirty cases, in five, all the stones were not removed; in three the operation was repeated, and in two cases the wound reopened and gave exit to the calculi that had been left.

Fenger has reported five cases, of which one died—equal to 20 per cent.; Murphy, of Chicago, five cases of which two died—equal to 40 per cent.

My own cases are twelve in number, out of which I have lost one, due to the accident of a slight laceration of the colon in separating adhesions, and a second in an aged patient who succumbed to exhaustion a month after operation—equal to 16·4 per cent.

Cholecystenterostomy consists in establishing an artificial opening between the gall-bladder and intestine, duodenum, jejunum, or colon, preferably the first, when it may be termed *cholecyst-duodenostomy*.

Although the conception of the operation occurred independently to Harley, Gaston and Nussbaum, the first operation was actually performed by Winiwater, of Liege, in 1880, and my own case, in 1889, was the first of the kind performed in England, and the first anywhere for biliary fistula. In its place it is an extremely useful operation, but as it leaves the cause of the obstruction unremedied it ought not to be resorted to except occasionally, where a more radical operation is impracticable or inadvisable.

My own conclusions are that the operation is indicated: (1,) In biliary fistulæ, depending on stricture or other permanent occlusion of the common duct; (2,) Only very occasionally in cancer of the head of the pancreas, or malignant tumour of the common duct leading to chronic jaundice and distended gall-bladder, as in such cases the mortality will necessarily be so high that the justifiability of the operation is questionable; (3,) Occasionally in impaction of the gall-stones in the ducts, where the patient is not in a fit condition to bear the more prolonged operation of separating adhesions, and crushing or removing the concretion by choledochotomy; (4,) In certain cases of obstruction of the cystic duct where cholecystectomy is impracticable.

Contra-indications.—These are as follows: (1,) In any obstruction of the bile ducts which can be cleared away with reasonable probability of success; (2,) In malignant disease of the head of the pancreas or

common bile duct leading to distension of the gall-bladder, the mortality is so great that it is hardly worth doing ; (3,) In contracted gall-bladder where it is impracticable to insert the button ; (4,) Where there are extensive adhesions which would lead to kinking of bowel ; (5,) In very large gall-bladder with obstruction of the cystic duct where cholecystectomy should be done. The operation may be performed : (a,) By means of simple suture ; (b,) By means of my decalcified bone bobbin ; (c,) By means of Murphy's button.

My first case, in 1889, was performed by suture, my second and third by means of the decalcified bone bobbins, and in all my later cases I have used the Murphy button. Although all the cases, when the operation was unassociated with cancer or suppurative cholangitis, recovered, I decidedly prefer to make the union by means of the Murphy button, both on account of its efficiency and the expedition with which it can be used.

The operation of cholecystenterostomy is performed through the same incision as is made for cholecystotomy, and after the gall-bladder has been aspirated and the intestine clamped, either by an indiarubber tourniquet or by intestinal clamps, the junction is effected. If sutures be employed, a semicircle of interrupted silk stitches is inserted to unite the contiguous serous surfaces of the gall-bladder and gut ; the viscera are then opened and the mucous margins of the two openings are united by interrupted catgut stitches, after which the circle of catgut stitches and then the circle of serous sutures is completed. If the bone bobbin be used, two continuous sutures only are employed, a silk stitch to unite the serous surfaces, $\frac{1}{3}$ or $\frac{1}{2}$ an inch from the visceral openings, and a catgut suture to join the mucous margins of the visceral openings.

For convenience, the posterior semicircle of the serous suture is first applied and the needle laid aside for a moment but not unthreaded. The openings are then made and the posterior half of the mucous suture is inserted ; the bobbin is then introduced and the mucous suture continued around until it meets the other end of the catgut, when the two ends are tied and cut off short. The serous suture is then carried around the anterior half until it reaches the point where it began, when the two ends are drawn on and tied. The bobbin keeps open the lumen until it is dissolved, and the mucous and serous sutures effectually protect the channel from leakage.

If the Murphy button be used the smallest size is selected and two running sutures are applied. After the gall-bladder has been emptied and the bowel clamped, either by Murphy's intestinal clamps or Lane's clamps or by a simple elastic tourniquet, the openings are

made in the viscera just sufficiently large to admit the separate ends of the button. The threads are then drawn on and tied around the central barrel of the button, after which the two ends of the button are approximated and pushed home firmly. The anastomosis is then complete.

The whole process occupies a very short time, and is really very simple. It is, however, necessary to bear in mind that the button has to separate by causing the approximated margins of the openings to slough, and that the true bond of union is only slight at first, so that it is well to keep the patient absolutely quiet for at least a fortnight, lest the new bond of union should give way and permit of extravasation of the visceral contents.

In considering the question of cholecystenterostomy, it has to be borne in mind that the operation can only be done when the gall-bladder is of moderate size or dilated, and that it is inapplicable to the difficult class of cases where a gall-stone is impacted in the common duct and the gall-bladder is atrophied.

When it can be done the anastomosis should be made to the duodenum, but if preferred a free loop of jejunum may be selected and brought over the hepatic flexure of the colon. In only exceptional cases should the anastomosis be made between the gall-bladder and colon.

The statistics according to Murphy, given in the transactions of the International Congress at Rome, are : Twenty-three cases by suture with eight deaths—equal to 34 per cent. ; twenty-one cases for gall-stone by button and no deaths—equal to 0 per cent. ; two cases for malignant disease with two deaths—equal to 100 per cent.

From a report up to date which Dr. Murphy has been so kind as to furnish me, cholecyst-duodenostomy has been performed with the aid of the anastomosis button in sixty-seven non-malignant cases with only three deaths, these being due to continuous hæmorrhage from laceration of the liver substance on the seventh day, to cholæmia on the fourth day, and to septicæmia on the fourth day respectively.

Of his twelve malignant cases ten died, being 83·3 per cent.

My own cases are twenty in number with two deaths—one a case of malignant disease with long continued jaundice, the other a case of chronic jaundice with infective cholangitis.

Choledochostomy is the term applied to the direct surface drainage of a dilated bile duct. Terrier³ has described four cases. I have heard of a fifth from Dr. Arnison, of Newcastle, and found a sixth in Guy's Museum, all ending fatally within a few days or weeks of operation owing to associated choledochitis and infection of the bile channels in the liver itself.

In July, 1896, I performed choledochostomy in a man of twenty-five, after crushing a gall-stone the size of a small hen's egg, situated at the junction of the cystic and common ducts. The gall-bladder was much smaller than the duct, and I found it easier to fix and drain the duct. The patient made a good recovery. I have since heard of a case by Yersen, but am unaware of the result.

Where it is impossible to clear the ducts, instead of performing choledochostomy, the operation of *choledochenterostomy* may be done, the union of the dilated duct to the duodenum being made by means of a Murphy's button.

I have twice performed the operation, which has also been done successfully by Drs. Sprenger and Kiedel, and by Dr. Swaine.

In my own cases I removed the shrunken and diseased gall-bladder, fixing the end of the dilated cystic duct to the bowel by a Murphy's button in one case and by a bone bobbin in another. No drainage was employed. The button was voided at stool on the tenth day.

REFERENCES.—¹"Brit. Med. Journ." Suppl., Jan. 7, 1893 ;
²"Berlin. klin. Woch.," June, 1896 ; ³"Rev. de chir.," Feb. 1893.

GASTRIC ULCER. (See also "Stomach.")

Priestley Leech, M.D., F.R.C.S.

Barker¹ reports seven cases of perforating gastric ulcer with three recoveries. In all the cases the perforation was on the anterior stomach wall ; the largest was only half-an-inch across. He operated by a median incision. In cleaning the peritoneal cavity dry sponging without irrigation of any kind was employed.

The following regions require special cleaning : between the liver and diaphragm ; round and behind the gall bladder ; the flanks and the pelvis. No difficulty was found in reaching these parts through a median incision. He prefers dry sponging for these cases after a large experience of flushing. The anterior wound was drained by strands of iodoform gauze in four cases with the best results. One piece was placed deeply between the liver and diaphragm on each side ; another to the suture in the gastric wall, and another down behind the gall bladder. They were removed on the fifth or the sixth day with some difficulty. In no case was the ulcer excised. Silk stitches were used with round sewing needles.

Great reliance is placed in the after treatment on feeding by the mouth. Small repeated doses of egg albumen and water, of brandy, beef tea and chicken broth, were given as soon as the patient had recovered from the anæsthetic. In addition peptonized suppositories

were introduced into the rectum, alternating every two hours with 5 ounces of hot water.

From the experience of these cases he thinks success or failure depends on the time that has elapsed before treatment is begun ; on the character of the last meal before perforation, solid food being much more irritating. Treatment for gastric ulcer must be carried on for some time after recovery. The stomach contents were evacuated in all cases, and this is better done through the perforation than by washing out. In one case the pulse and general condition improved greatly on the opening of the abdomen, and the escape of gas and fluid pent up under great pressure.

In an editorial² this subject is fully treated. When it is impossible to close the perforation with sutures either a tube should be passed and the food drawn off, and then the abdominal wall closed round the tube with strips of iodoform gauze so as to promote adhesions ; or a less satisfactory plan is to stitch the margins of the perforation to the abdominal incision, and treat as a gastric fistula. Where the perforation is on the posterior surface of the stomach the surgeon can examine the posterior wall by (*a*), carefully tearing through the lesser omentum and inverting the anterior wall and bringing the posterior wall into view through the hole made in the lesser omentum ; (*b*), by tearing through the great omentum ; (*c*), by passing the finger through the foramen of Winslow. Cleansing of the peritoneum cavity by irrigation is recommended to be performed in every case.

Morse³ reports three cases operated on with two recoveries. Braun⁴ records a case where it was impossible to close the perforation by sutures, and the stomach wall could not be brought forwards to the abdominal wall, and he was obliged to close it by suturing a piece of omentum over it. Bennett,⁵ of St. George's Hospital, had done the same thing. Braun's case (done in 1893) recovered, and was seen three and a half years later.

Drs. Adamson and Renton⁶ report two cases of ruptured gastric ulcer ; both were operated on, and one recovered ; in the other case the ulcer could not be found, and *post mortem* it was found that the cardiac end of the stomach was adherent to the diaphragm and had formed a localized cavity into which a posterior ulcer had burst. In the first case which recovered, in addition to pain in the stomach, in a spot below the left ribs, she also complained of pain in the region of the left clavicle passing up the neck, and on auscultation over the stomach a bell-like tinkling sound was heard at intervals. Dr. Adamson says that in a previous case the pain over the clavicles was present, but much more extensively

Mr. F. O. Simpson⁷ reports a fatal case of acute perforating ulcer of the jejunum in a lunatic. No foreign body was found to account for it.

REFERENCES.—¹"Lancet," Dec. 5, 1896; ²"Annals of Surg.," Nov. 1896; ³"Brit. Med. Journ.," Feb. 13, 1897; ⁴"Centralbl. f. Chir.," No. 27, 1897; ⁵"Brit. Med. Journ.," Aug. 21, 1897; ⁶Ibid.; ⁷"Practitioner," Feb., 1897.

GASTRITIS. (See "Stomach.")

GASTRO-SUCCORRHŒA. (See "Stomach.")

GASTROPTOSIS. (See "Stomach.")

GASTROSTOMY.

Priestley Leech, M.D., F.R.C.S.

Fontan^r describes the following method for this operation:—

(1,) The ordinary epigastric incision; (2,) The seizure of the stomach with a pair of toothed forceps, and the production of a hernia of considerable size; (3,) The suturing of this fold to the edges of the wound; (4,) The invagination of this fold, the forceps still remaining in position, and the suturing together of the serous surfaces at the end of the wound; (5,) The incision of the stomach wall by a bistoury passed along the forceps and the insertion of a cannula. The cannula is thus placed in a valvular opening formed like an inverted bishop's mitre with the walls of the stomach forming its gastric surface while the serous surfaces are opposed to each other.

Mr. Leonard Bidwell^a is strongly in favour of attaching the stomach to the abdominal peritoneum alone and not to the abdominal parietes for the following reasons: (1,) The stomach being a movable organ should be sutured to some freely movable part, or the constant dragging of the stomach will interfere with the formation of new adhesions; the whole thickness of the abdominal wall is not sufficiently movable while the peritoneum is but loosely attached to other parts; (2,) The stitches may be left in as a support to the adhesions between stomach and peritoneum as they do not pass through the skin and are not liable to become septic; (3,) When the stomach is attached to the peritoneum alone it returns to its normal position, dragging with it a funnel-shaped portion of the parietal peritoneum; (4,) This retraction of stomach and attached peritoneum leaves a long sinuous tract from the stomach to the skin which has a great tendency to contract and so prevents any escape of stomach contents. Mr. Bidwell has performed this operation in two cases with good results as regards leakage. He uses Halsted's sutures to fix the stomach wall to the peritoneum.

V. Hacker³ has a method of performing gastrostomy with the rectus as a sphincter, and a combination of this with Witzel's method.

REFERENCES.—¹"Rev. de Chir.," Nov. 1896; ²"Brit. Med. Journ.," Oct. 24, 1896; ³"Beitr. z. Klin. Chir.," Bd. xvii, Hft. 2.

GLANDULAR FEVER. *Henry Dwight Chapin, M.D., New York.*

Dr. J. Park West ¹ describes an epidemic that prevailed in a district in eastern Ohio, beginning in the spring of 1893, continuing through the cooler months of 1894 and 1895, and ending in the spring of 1896. The disease was a general infection with a local manifestation in the lymphatic system, corresponding in detail to the disease described by Pfeiffer as glandular fever, and described by Foster as "an acute fever accompanied by a swollen condition of the cervical or intestinal lymphatic glands, with uneasiness, anorexia, and nausea. There is dysphagia or diarrhœa, according to the glands affected." The tongue was moist and covered with a whitish coating except in the severe cases, when it became brownish and dry. The breath was tainted. Constipation existed in a large majority of the cases, but diarrhœa was occasionally present. Respiration was quickened in all except the mildest cases, and a short, unimportant cough was noted a few times. Debility and a weak, rapid pulse were always present.

The most marked feature in all the cases was the enlargement of the cervical, or to be more definite, the carotid lymphatic glands. After two or three days of malaise the swelling could be seen. As a rule, it began on the left side and reached full development on the second to fourth day; several hours before its completion on this side it could be noticed on the right, and the same course would be followed as on the left. With reference to incubation, most children came down on the seventh day after exposure.

Dr. Dawson Williams ² contributes a description of the glandular fever of childhood. The most prominent and characteristic symptoms are stiffness of the neck, tenderness in the anterior triangle and some pain on movement of the head and on deglutition. There may be some undue redness of the pharyngeal mucous membrane, but throughout the whole course of the illness nothing like definite pharyngitis or tonsillitis. On the second or third day a swelling is noticed in the neck, which is found to be due to three or four enlarged lymphatic glands, which can be felt beneath the sterno-mastoid muscle and along its anterior border. The temperature becomes higher and usually touches 104° F., and the ordinary symptoms of pyrexia are present. The glands, which are tender, remain swollen for from two to five days and then begin to diminish. The glands first affected, are as a rule, those of the left side, and the pain on movement may lead to the head being flexed towards that side. Before the glands on the left side have begun to subside those on the right begin to enlarge and in a day or two attain a size corresponding

to that reached by those on the left side when at the maximum. Tenderness of the abdomen may be a very marked symptom, and in a large proportion of cases the mesenteric glands can be felt to be enlarged. The liver is enlarged almost invariably, and the spleen in more than half the cases. The other cervical glands may also become enlarged, the axillary and inguinal glands less often. The disease is mild and is seldom or never the direct cause of death, but it leaves the child in an anæmic and depressed state, which may last long after all trace of enlargement of the lymphatic glands—which has usually ceased in ten days or a fortnight—has disappeared.

REFERENCES—¹ "Arch. Ped.," vol. xiii., No. 12, 1896; ² "Lancet," Jan. 16, 1897.

GLAUCOMA.

William Oliver Moore, M.D., New York.

Greenow,¹ of Breslau, has no fear as to the use of **Cocain** in glaucomatous eyes, never having seen it do harm; but, on the contrary, its use attended by good results, diminishing acute pain and hyperæmia.

Richey² says he has never seen a case of glaucoma, acute or chronic, without the history of *gout* inherited or acquired. When syphilis is the cause, antisiphilitic treatment; acute or chronic glaucoma of other origin finds its origin in the *digestive tract*, slowly producing a degrading tissue-change in various organs as glaucoma, nephritis, etc. That *chronic simple glaucoma* consists in a hyperplasia of connective tissue, involving the whole bulb, and *cannot be cured by operation*.

In *acute glaucoma* he commends the general **Hot Bath**, the use of a **Myotic** with **Taxis** of the eyeball, the use of **Colchicin**, the hot bath repeated after several hours, always keeping the patient warm after it.

In *chronic glaucoma* baths, always hot, several times a week in a warm room, immersing the whole body. The temperature of bath to be 102° to 104° F. A weak myotic collyrium must be persisted in with taxis for a few minutes until the tension is normal; **Sodium**, **Salicylate**, **Ammonia**, and **Taraxacum** should be used freely. The bowels must be freely opened.

Hansell³ says great diversity of opinion may be found in the writings of clinicians as to the efficacy of the various remedies. For instance: Cohn,⁴ Abadie,⁵ and Simi,⁶ agree that the daily use of **Eserin Sulphate** is indicated; on the other hand, Nettleship⁷ urges **Iridectomy** without delay, and Ramsey⁸ as soon as the diagnosis is established. Wickerkiewicz⁹ advises first **eserin**, then **sclerotomy**, then **iridectomy**.

Hansell is opposed to immediate iridectomy, as it has been known

to precipitate an attack of acute glaucoma on the fellow eye; the astigmatism consequent upon the corneal incision and the irregular refraction of the extra pupillary portion of the lens is detrimental to good vision. Eserin sulphate, a painless application, may be continued for years without danger, and is of indubitable value.

REFERENCES.—¹“Sem. méd.,” 16 Ann., No. 40; ²“Amer. Journ. Med. Sci.,” Feb., 1897; ³“Philadelph. Polyclin.,” Jan. 2, 1897; ⁴“Berlin. klin. Woch.,” May 27, 1895; ⁵“Arch. d’ophthal.,” Nov., 1895; ⁶Ibid.; ⁷“Brit. Med. Journ.,” Oct. 19, 1895; ⁸“Glasgow Med. Journ.,” vol. xliii., No. 4; ⁹“Klin. Monats. f. Augenh.,” May, 1896.

GOITRE (Exophthalmic). (See “Exophthalmic Goitre.”)

GONORRHŒA.

E. Hurry Fenwick, F.R.C.S.

Ichthyol Irrigations in Gonorrhœa.—In place of the ordinary potassium permanganate solution employed by Janet in the method of urethral irrigation, associated with his name, Jadassohn,¹ of Hamburg, has employed **Ichthyol** in 1 per cent. solution. The technique of the process is precisely the same as Janet’s.

Dr. Werner² gives an account of the results of this treatment in the eighty-two cases in which information was available. In twenty of these the disease was confined to the anterior portion of the urethra and had lasted for from a week to two months before the beginning of the treatment. Absolute cure was obtained in nineteen cases, with from six to thirty-five sittings (average seventeen). In sixty-two cases the posterior part of the urethra was also affected, and of these a cure was obtained in only fifty-two, the number of sittings required being from two to forty (average nineteen). The single unsuccessful case of anterior urethritis was one of a month’s duration. Here, however, the gonococci disappeared after twenty-eight douches, but as the catarrh continued the cure could not be said to be complete. It was, however, quickly effected by zinc sulphate injections. Of the nine cases where cure was not obtained, some left the hospital against advice before a cure could be effected, and in some epididymitis supervened which obliged the douches to be discontinued. In three of them, however, the gonococci had entirely disappeared after from three to twenty-eight douches. Several cases of gonorrhœal cystitis, some of them with pyrexia and severe tenesmus, were very successfully treated by ichthyol douches, but in some others no effect was produced and the cure was obtained by argonin. A number of cases were treated by means of douches of resorcin of the strength of 1 per cent. applied similarly to the ichthyol irrigations, but with very much less satisfactory results.

As evidence of absolute cure Dr. Werner requires the following

facts : (1,) That after twenty-four hours' cessation from treatment no visible discharge is present ; (2,) That the urine when poured from one vessel into another is free from threads ; and (3,) That no gonococci can be detected in the last gonorrhœal threads found. Strictly speaking, of course, further examination should be made later, but this is impracticable with hospital out-patients.

Henry Heiman³ contributes a paper on a further study of the Biology of the *Gonococcus* (Neisser) with contributions to the technique—a paper based upon the morphological and biological examination of exudates in cases of chronic urethritis, in which are set forth in detail the methods of culture employed.

After numerous experiments the preference was given to sterilized liquid chest serum—1 part (pleuritic effusion) plus 2 per cent. of agar, plus 1 per cent. of peptone, plus 0.5 per cent. of salt, 2 parts. This is readily obtainable, and upon it the gonococcus grows, according to the author's experience, better than on any other medium. The first experiments with chest-serum sterilizations were faulty, as many of the plates became contaminated. This was attributable to the fact that sterilization for one hour at 65° C., for six consecutive days, and then placing the serum in the incubator for control for forty-eight hours, is not sufficient to render the serum entirely sterile. Fractional sterilization was therefore continued for three days longer at 65° C., after having kept the serum at room temperature for three days.

Longevity of Gonococci.—The results of experiments to determine the longevity of gonococci with gonorrhœal pus, kept either at body or room temperature, are as follows : Pus for this purpose was obtained from gonorrhœal urine by the centrifuge. Some of the tubes were placed at body and some at room temperature. The result of the immediate examination of the gonorrhœal pus, intended to be kept at body temperature, was positive both in cover-glass preparations and on chest-serum agar plates. After twenty-four hours at body temperature only few gonococci could be found in cover-glass preparations, but very many on cultures. Some of the gonorrhœal pus reacted acid and some neutral. Some of the tubes containing gonorrhœal pus, kept under the same condition, at room temperature, showed gonococci in the first examination in cover-glass preparations and on chest-serum agar plates. After they had been kept for twenty-four hours at room temperature, the gonococcus was demonstrated on both cover-glasses and plates, and the same results were obtainable after forty-eight hours. In gonorrhœal urine, kept twenty-four hours at room temperature, the gonococcus was found both in cover-glasses and on chest-serum agar

plates. Gonorrhœal pus was smeared on sterilized linen, which was stored in a test tube, and after three hours the pus was planted directly from the linen on the agar plates, and cover-glass preparations were made. This experiment gave a positive result, but on planting the material directly from the linen, after twenty-four hours, the gonococcus could no longer be grown, while the pus cells on cover-glass seemed to be undergoing decomposition. Some of the pus-smeared linen was examined sixty-six days after its preparation, when the gonococcus was still demonstrable with cover-glasses.

Wocholtz and Nowak ⁴ found that gonococci when dried lose their power of growth.

A. Haberdas ⁵ reported that he found gonococci on linen several weeks after besmearing the fabric. He did not, however, make culture experiments.

In all instances the author employed Gram's method. He looks upon the decolorization by Gram's method as the only reliable criterion, so far known, for the gonococcus, and it is of material help also in determining whether a culture is or is not that of the gonococcus. The examination of gonorrhœal threads with cover-glass by Gram's method is a very tedious affair, as in every instance the author examined no less than three, and at times as many as ten cover-glass preparations. It would require many hours upon each and every specimen, especially if gonococci are present in very small numbers, before a reliable and conscientious opinion could be rendered. It is a well admitted fact that the culture medium is more sensitive for bacteria than the cover-glass, and this holds true for the gonococcus, for we are able to plant each and every thread of the sediment in the centrifugal tube. In one instance in examining threads the gonococcus was not demonstrable in cover-glass preparations, but could be grown on chest-serum agar plates, while in all instances in which the gonococcus was found in threads in cover-glass preparations, growth on chest-serum agar plates could be obtained.

In regard to the question of infection in chronic gonorrhœa, the author believes that chronic gonorrhœa can cause an acute gonorrhœa in another person. This belief is confirmed by Finger and Wertheim ⁶ by inoculation experiments. Of course, we cannot always trace the method of gonorrhœal infection in the male urethra, nor even account for it. The author cannot believe with certain observers that diplococci may be present in the male urethra or in the vulvo-vaginal tract, which under certain peculiar conditions can become virulent and thus produce a true gonorrhœa. He does not deny that there may not be some micro-organisms, not as yet isolated,

which might produce a urethritis or vaginitis, but it is not a gonorrhœal type of inflammation.

Welander⁷ has shown as far back as 1884 that on injecting vaginal pus free from gonococci into the male urethra no urethritis followed, and in three cases in which vaginal pus, containing gonococci, was injected virulent forms of gonorrhœa followed. Zweifel⁸ inoculated lochial secretions free from gonococci into the conjunctiva of the newborn with negative results. Baunn injected secretions from the cervix uteri free from gonorrhœal elements into the male urethra with negative results. Säger,⁹ as far back as 1884, suggested that gonococci may be present in the secretions of the urethra which may assume an amorphous or a granular form. This characteristic was noted by Toulon¹⁰ and termed the 'involution' or 'degenerated' type of gonococcus, which may be present in the pus cells and be unrecognizable under the microscope with the usual stains. The author was able to demonstrate by experiments with gonococcus cultures that were from seven to fifty-one days old, that a cover-glass preparation showed nothing but an amorphous and granular mass. But on transplanting such amorphous material he obtained in from twenty-four to forty-eight hours, a characteristic colony of the gonococcus which morphologically was typical. Even with a culture fifty-one days' old experiments prove that gonococci may be present in gonorrhœal threads, and yet may not be recognizable in cover-glass preparations but only in cultures.

The author endorses the experiments of Wertheim, who believes that the gonococcus does not lose its virulence in the urethra, but that the mucous membrane, which it infects, becomes tolerant to this particular gonococcus. A male with chronic gonorrhœa will cause an acute gonorrhœa in a person with whom he cohabits, and the same is true of the female. The probability, therefore, points to the fact that an acute exacerbation in a case of chronic gonorrhœa is produced in such a way.

Another advantage of culture examinations over cover-glass preparations is that with the former we are able to demonstrate the viability of the gonococcus. In children, with chronic colpitis, the author found a diplococcus smaller than the gonococcus, which decolorizes by Gram's method and has a different appearance in culture. Baunn in 1885 said that the time is not far distant when the term "latent gonorrhœa" will be dropped by those studying the etiological factors of gonorrhœa with culture media.

The following are the results of the examination of gonorrhœal threads of chronic urethritis with cover-glass preparations of other

observers. Goll,¹¹ according to his elaborate article, examined one thousand and forty-six cases of chronic urethritis, varying in duration between four weeks and six years or more, finding gonococci in one hundred and seventy-eight cases, the remainder giving negative results. Neisser¹² out of one hundred and forty-three cases, varying in duration between two months and eight years, found gonococci in eighty cases. Weinrich,¹³ out of twenty-five similar cases, obtained two positive results. E. Noyerath,¹⁴ in 1887, deplored the fact that on account of the lack of culture media for the gonococcus we cannot always demonstrate them. Bröse,¹⁵ in 1893, stated that the culture medium is the only reliable agent for the detection of the gonococcus. This latter statement is certainly applicable to chronic urethritis of the male. Neisser,¹⁶ in 1893, stated that in chronic urethritis with slight discharge, the examination with a culture medium for gonococci will replace the cover-glass. Landström¹⁷ examined fifty cases of chronic urethritis, finding gonococcus in cases of two years' duration. Gabriel¹⁸ examined the secretions of one hundred chronic urethritis cases without finding the gonococcus in any. Kamfer¹⁹ examined fifty cases of chronic urethritis, finding in fifteen cases no bacteria, in seven cases gonococci, in ten cases bacilli and other cocci, and in eighteen various forms of cocci. It is interesting in connection with the results of the last writer to allude to the fact that his cover-glass preparations were stained with solution of the aniline dyes, and only in doubtful cases was Gram's method applied.

In conclusion, the author submits the following propositions as a summary of his experiments :—

(1.) That in the examination of secretions from urethritis the employment of the centrifuge not only is the most convenient method but also gives the best and most reliable results.

(2.) The medium employed by Hamner, consisting of albuminous urine plus glycerin agar, does not give so good results as chest-serum agar, as far as the author's experiments have shown.

(3.) Fractional sterilization of serum should be continued longer than six days, and after an interval of two or three days it should be sterilized again on three consecutive days.

(4.) As liquid media for the gonococcus, fermentation broth plus liquid chest-serum, Danl an's peptone solution plus liquid chest-serum, nutrient broth plus liquid chest-serum are recommended.

(5.) In the fermentation broth plus liquid chest-serum, Heiman was able to cultivate the gonococcus after fifty-one days, at which time the experiments were discontinued.

(6.) Gonorrhœal pus submitted to the centrifuge and kept moist at

room temperature contained living gonococci after forty-eight hours, as proved by culture.

(7,) In gonorrhœal pus which had been smeared on linen the gonococcus was demonstrated morphologically by Gram's method after forty-nine days in a cover-glass, at which time the experiments were discontinued.

(8,) The gonococcus was demonstrated after twenty-nine days in cover-glass preparation, made from pus, which had been dried on glass.

(9,) In chronic urethritis, culture media alone are to be recommended for the detection of the gonococcus.

(10,) In thirty-four examinations of gonorrhœal threads with cover-glass alone, by Gram's method seven cases showed the gonococcus.

(11,) Of sixty-one cases of gonorrhœal threads examined with cover-glass and culture media, thirteen gave positive results with cover-glass and fourteen with culture media.

(12,) For the collection of the secretions and threads for planting, at least two specimens of urine must be obtained: first, that which washes out the urethra; second, that which contains threads of the posterior urethra and secretion expressed from the prostate.

(13,) Heiman believes that a urethra may contain gonococci which lie dormant and may be innocuous in that person for years, but which may at any time excite an acute gonorrhœa in another person.

REFERENCES.—¹"Lancet," April 14, 1897; ²"Monats. f. Prak. Derm.," Aug. 1896; "Lancet," April 24, 1897; ³"Med. Rec.," Dec. 19, 1896; ⁴"Deut. med. Woch.," 1895, No. 22; ⁵"Viertelj. f. ger. Med.," and Suppl., s. 227; ⁶"Wiener klin. Woch.," 1894, No. 24; ⁷"Gaz. méd.," 1884, p. 267; ⁸"Arch. f. Gyn.," 22, p. 318; ⁹Ibid., 1884, p. 109; ¹⁰"Berl. klin. Woch.," 1894, s. 486; ¹¹"Corresp.-Blatt f. schw. Aerzte," 1891, vol. xxi.; ¹²"Brislauer ärztl. Zeit. und Jahrgang.," No. 6; ¹³"Inany. Dissert. Berlin," 1891; ¹⁴"Deut. med. Woch.," 1887, s. 1,059; ¹⁵"Zeit. f. Geburt. u. Gynæk.," 1893, Bd. xxvi., s. 187; ¹⁶"Deut. med. Woch.," 1893, s. 694 and 722; ¹⁷"Studies from Gonococcus," Neisser, Helsingfors, 1885; ¹⁸"Deut. med. Woch.," 1890, No. 30, s. 657; ¹⁹"Derm. Zeit. Jamear," 1896, Bd. 3, Hft. 1.

GONORRHŒA (in Women). *Theophilus Parvin, M.D., Philadelphia.*

De Smet¹ strongly recommends **Formalin** in gonorrhœa of women. The vulva is washed with 1 in 1000 solution of the drug, and before using the speculum the vagina is washed out with 2 to 3 per cent. solution. By a tampon dipped in this mixture, care is taken to bring the medicament in direct contact with every part of the diseased surface. It may also be well to swab out the cervical canal with 2 in 1000 solution. If the mouth of the womb is ulcerated, a tampon of gauze

impregnated with 1 in 1000 solution is introduced before withdrawing the speculum, and the tampon removed only after two or three hours. The author believes that this drug is the most rapid and best agent in curing gonorrhœa in the female.

REFERENCES.—¹“Journ. de méd. de Paris” and “Therap. Gaz.,” Dec., 1896.

GOUT.*[Editorial.]*

The prevailing theories of the chemistry of uric acid were very fully and impartially recapitulated by Dr. Arthur P. Luff in the Goulstonian Lectures. The views which the author adopted as a result of this consideration and also after a series of chemical experiments, are given below. The paper itself is one which should be read by every practitioner. Dr. Luff regarded the view that gout could be cured by abstinence from meat as erroneous, and in doing so he probably will be supported by all practitioners who have had an extended clinical experience of the disorder.

Very great injury has been done by the treatment of gouty patients in accordance with fanciful theories respecting diet ; none of them are more calculated to do harm than those which force the patient to live chiefly on starch-containing foods.

Dr. Luff's¹ conclusions are as follows : (1,) Uric acid is not normally present in the blood of man and other mammals, nor in the blood of birds ; (2,) Uric acid is normally produced only in the kidneys ; (3,) Uric acid is normally formed from urea, probably by conjugation of that substance with glycocin in the kidneys ; (4,) Uric acid is present in the blood in gout as the soluble sodium quadriurate. In its soluble form it is not a toxic agent. It deposits from the blood as sodium biurate, which acts passively and physically as a foreign body in the tissues or organs in which it is deposited ; (5,) The presence of uric acid in the blood in gout is due to its deficient excretion by the kidneys, and to the subsequent absorption of the non-excreted portion into the blood from those organs ; (6,) Gout is probably always preceded by some affection of the kidneys, functional or organic, which interferes with the proper excretion of uric acid. The probable seat of the kidney affection giving rise to gout is in the epithelium of the convoluted tubes ; (7,) In certain blood diseases and disorders accompanied by leucocytosis uric acid is formed within the system from nuclein. Under such circumstances it passes at once into the blood and is rapidly eliminated by the kidneys ; (8,) The solubility of uric acid in the blood is not affected by a diminished alkalinity of the blood produced by the addition of organic acids ; (9,) The deposition of sodium biurate is not accelerated by a diminution of the alkalinity

of the blood ; (10,) An increased alkalinity of the blood does not increase the solubility of deposits of sodium biurate ; (11,) The saline constituents of vegetables exercise a remarkable inhibitory power over the decomposition of sodium quadriurate ; (12,) The solubility of sodium biurate in the blood is increased by the presence of the saline constituents of vegetables ; (13,) The solubility of sodium biurate in the blood is diminished by the presence of the saline constituents of meat ; (14,) The gout-inducing properties of certain wines are not due to their acidity. Probably they owe their gout-inducing action to the effect they exercise on the metabolism of the liver.

Rommel² opposes the view of Kolisch that the alloxuric bodies are increased in gout, and that the graver the involvement of the kidney the smaller is the excretion of uric acid and the greater is the excretion of the alloxuric bases (xanthin bases). He quotes the views of Schmoll and Weintrand, who held that the excretion of the alloxuric bodies (uric acid and xanthin bases) in gouty patients does not exceed that for the normal individual unless possibly at the onset of an acute attack. Rommel found in a patient with gout and chronic lead-poisoning that the elimination of the alloxuric bodies was about normal, and a separate estimation of the uric acid showed it to be excreted in normal quantity. The patient had marked evidences of contracted kidneys, so that Rommel's results are directly opposite to the conditions found in gout and granular kidneys by Kolisch. Another case with interstitial nephritis, but without gout, showed an increase of the total alloxuric bodies, with, further, a marked increase in one of the individual members of this group—namely, the uric acid. This case is strong evidence against the theory of Kolisch.

Malfatti³ found in a patient suffering from gout that during an acute attack of arthritis the quantity of alloxuric bodies eliminated in the urine was considerably higher than the amount excreted between the acute attacks. However, even during the acute attack they did not reach the normal amount for the healthy individual. This is in direct opposition to the view of Kolisch. Malfatti believes that the accurate experiments of Schmoll, Vogel, and Magnas Levy show that gout is a disease in which the normal metabolism is so changed that the nitrogen elimination is no longer an accurate representation of the nitrogen ingested, but that periodically the excretion of nitrogen far exceeds the amount taken in, while at other times it is considerably less and there is as a result an accumulation of it within the organism.

Fawcett⁴ gives the results of the analysis of the urine in thirteen cases of gout, with the effects of **Colchicum** and **Salicylate of Sodium** treatment, as shown by changes in the urine. The total acidity of the

urine and the daily excretion of urea and uric acid are determined. All the cases were those of chronic gout, some of which passed through acute attacks of arthritis during the observation-period. As to the excretion of uric acid, he finds the amount eliminated distinctly below normal between acute attacks, but varying greatly from day to day. In the acute stages the uric acid excretion is much higher than between the attacks, but even then does not reach the normal. These results accord closely with those of Garrod and Pfeiffer, although the latter found the uric acid excretion above normal in some of the cases with acute attacks. An increased acidity of the urine, and a diminution in the uric acid elimination, were not found associated, the relationship between the two factors being quite irregular. This is opposed to Haig's theory as to the etiology of gout—namely, that a uric acid retention is associated with a diminished alkalinity of the blood and a corresponding increase in the acidity of the urine. No relationship between the amount of urine voided and the quantity of uric acid excreted was found. The acidity of the urine and the quantity of urea eliminated corresponded closely, a rise or fall of one being associated with a rise or fall of the other. The uric acid was not increased by colchicum; on the contrary, in the majority of instances its elimination was distinctly diminished. Garrod also holds that the good effect of colchicum is not due to its removing the uric acid from the system. How it acts apart from relieving the pain in acute attacks is still unknown. It does not act as a diuretic. Fawcett found, as Haig had already observed in gout, that the uric acid elimination is markedly increased by the administration of salicylate of sodium. It also produced a distinct analgesic effect and a slight increase in the urea elimination. Bohland believes that the increased uric acid after salicylate administration is not due to a clearing out of stored-up uric acid, but to an increased production from an increased destruction of leucocytes. These liberate an increased amount of nucleins, from which, as Horbaczewski believes, the uric acid is derived. The salicylate was found to possess but slight diuretic action.

TREATMENT.—Jaccoud⁵ divides this subject into three parts, according as one has to deal with the acute attack proper, the subacute attack, or the recurrent disease. In the first case he does nothing during the first five days, except to promote diuresis by the most simple means, such as the administration of a litre or so of **Evian** or **Vittel Water** daily, with perhaps the addition of a little **Acetate of Potassium**; he does not even give milk, preferring that the "explosive energy" of the disease shall be expended on the organic tissues themselves. He applies anodyne embrocations to the joints, and covers up

the parts with a thick coat of wadding. At the end of this time, if the fever and pains have subsided, the attack is nearing its end, and no further treatment is necessary; milk should now always be given. If no improvement has taken place, Jaccoud gives $1\frac{1}{2}$ grains of **Hydrobromate of Quinine** with $\frac{3}{4}$ of a grain of **Digitalis Powder** in pill form, five or six times a day; this usually produces the desired effect within two days. If, however, the pains are worse on the fifth day than at the onset, **Salicylate of Sodium** in 30 to 40-grain doses should be given, provided the urine is free from albumin; after the second dose the urine is to be tested with ferric chloride, and if the salicylate reaction is feeble or wanting the drug must be stopped. In the subacute form of the disease—which is characterized mainly by its prolonged duration—if this treatment, though diminishing the pains, does not cut short the attack on the ninth or tenth day, recourse must be had to **Colchicum**. This the author prefers to give in the form of pills; he recommends Becquerel's formula, each pill containing $\frac{1}{2}$ grain of extract of digitalis, 2 grains of sulphate (or preferably hydrobromate) of quinine, and $\frac{1}{2}$ grain of colchicum seeds. Not more than 2 pills should be given a day, to avoid the risk of excessive purgation. No special anti-gout medication is to be employed between the attacks. The treatment of recurrent gout resembles that of the subacute form. Visceral gout, unassociated with articular symptoms, is a late complication, only coming on after years of typical gout; if there is no joint affection within twenty-four hours, colchicum is to be given at once. At the same time the joints usually affected are to be covered with powerful revulsants and vigorously blistered. Whether this abortive treatment succeeds or not, it is always to be adopted.

Grawitz⁶ makes use of **Hot Sand-Baths**; the dry sand is heated to a temperature of 104° to 122° F. and the limb wrapped in it. This has not, according to the author, benefited any instance of arthritis, although it relieves nerve-pains, as in neuritis after influenza. Of the various chemical remedies, piperazin, lysidin, lycetal, and others of the kind are without theory as to their action, and their first words of praise are followed by adverse criticism, so that their popularity is of short duration. Of much greater value is the **Electrical Treatment**, making use of a battery of forty-eight large Leclanché cells for thirty minutes. The positive pole, connected with a carbon electrode, is immersed in a 2 per cent. solution of lithium chloride which has been made alkaline with lithium carbonate. The negative carbon electrode is placed in a very weak sodium chloride solution. The portion of the body to be treated is placed in the lithium bath and a convenient part, as the hand or foot, is put into the salt solution. A current of twenty

to thirty milliampères is now passed, although some patients cannot bear more than ten. Of the fifteen patients who received this treatment, ten were markedly benefited, while in the remainder the results were less favourable or negative. The results claimed are that stiff and useless joints become movable and serviceable; that the pains are completely removed, and the muscular atrophy disappears. The theory of the action is that lithium, at the positive pole, is separated from the lithium chloride solution and carried into the body in an available form, so that readily soluble lithium urate is formed from the deposited urates.

Dr. William Murrell⁷ gives the following local method, which he has employed with success: "I take $\frac{1}{2}$ ounce of **Iodide of Potassium**, dissolve it in $\frac{1}{2}$ a pint of **Rectified Spirit**—methylated spirit is used in hospital practice—add 1 ounce of **Soap Liniment**, and then $\frac{1}{2}$ drachm each of **Oil of Cajeput** and **Oil of Cloves**. A piece of lint is soaked in this mixture, wrapped round the affected part, covered with a protective, and kept in place by a bandage. It acts as a powerful counter-irritant, and the inflammation usually subsides in from twelve to twenty-four hours. In addition, I not uncommonly give 1 drachm of **Colchicum Wine** with 10 grains of iodide of potassium three times a day. These large doses of colchicum wine induce brisk purgation, sometimes accompanied by vomiting, but they speedily cut short the attack. This mode of treatment is especially useful in the case of robust, full-bodied men in active employment, to whom the loss of a day's work is a serious consideration. In sciatica, lumbago, and rheumatism affecting one joint the local application of a liniment containing $\frac{1}{2}$ ounce of salicylate of sodium, $\frac{1}{2}$ drachm of oil of cajeput, 15 minims of oil of eucalyptus, and $\frac{1}{2}$ ounce of soap liniment in 6 ounces of rectified spirit affords prompt relief."

Mr. William Armstrong⁸ says that during the last few years he has given a trial in various cases of gouty arthritis and recurrent renal calculi to a method of treatment based on the prolonged administration of nothing but **Red Meat** and **Hot Water**, and very marked improvement had resulted, which had persisted in spite of gradual return to an ordinary dietary. The recent work of Luff and Haig seemed to show that the red meats or their salts were in themselves harmful to the gouty, but his own observations during the last two years on auto-intoxication in relation to the causation of gout and rheumatoid arthritis had led him to believe that it was the complex chemical changes brought about by the admixture of red meats with carbohydrates and sugar, which caused the excessive formation of uric acid. The more complete understanding of these chemical

changes had been facilitated by the work of Lauder Brunton, Gautier, and Bouchard. His plan was to give the patient a daily allowance of from 1 lb. to 4 lbs. of lean beef steak, minced and cooked in various ways, the patient drinking from 2 to five pints of hot water, and avoiding all starchy, saccharine, and fermentative articles of food. The effects which he had obtained were rapid diminution of abdominal girth, loss of fat and flabby tissue, increase in the quantity, and ultimate disappearance, of urates, alkaloids, and toxins from the urine. The joint swelling greatly diminished, the aching and pain were much diminished, and their mobility considerably increased. The capacity for work mental and bodily was enhanced, and the symptoms of mal-digestion and disassimilation disappeared. This treatment was indicated (1,) In obstinate chronic gouty arthritis; (2,) In recurrent uric acid calculi; (3,) In frequent and intractable migraine; (4,) In cases of persistent gouty dyspepsia. It was specially useful when there were symptoms of amylaceous and intestinal dyspepsia, of excessive formation of sulphuretted hydrogen, urates, indican, skatol, and other toxins. Although it had been held that these toxins were formed from decomposing proteids only, Brunton had shown that starch was a great offender, and Bouchard laid stress upon the fact that bread was especially apt to form many poisons in the alimentary canal. The carbohydrates, by their affinity for oxygen, interfered with the due oxidation of the tissues. Under this treatment digestion was more complete and the processes of fermentation and putrefaction were kept within narrower limits, oxidation being more perfect and less waste being consequently left in the system. Whatever poisonous matters remained in the system were readily eliminated by the taking of the hot water, which also flushed the stomach, liver, and kidneys. He admitted that the treatment was irksome and trying, and must of necessity be carried out with great strictness, therefore its use should be restricted to the more difficult cases. It should be prescribed but rarely, and then only under the most careful supervision in cases in which the heart or kidneys were diseased. Used with due care, he considered it a most efficient and even brilliant addition to the therapeutic measures.

F. Levison⁹ has examined the new remedies recommended as solvents for uric acid, not only for concretions in the kidneys, but for the form of uratic deposits in gout. Evidence from literature, as well as his own experience, leads him to the conclusion that neither piperazin, lycetol, nor lysidin had any special remedial property in this affection. They combine readily enough with uric acid to form soluble salts, but when given *per os* and excreted with the urine they

lose that property completely or in greater part. Another new remedy, urocedin—recommended by Mendelsohn—is a combination of citrate of sodium and sulphate of sodium with small quantities of citrate of lithium and chloride of sodium, and is not superior to the citrate of sodium so long in use.

REFERENCES.—¹“Lancet,” March 2, 1897; ²“Zeit. für klin. Med.,” Band xxx, Heft 1; ³“Wien. klin. Woch.,” No. 32, 1896; ⁴“Guy’s Hosp. Reports,” vol. iii, 1895; ⁵“Med. Press and Hosp. Gaz.,” May 8, 1897; ⁶“St. Petersburg med. Woch.,” Nos. 1 and 2, 1897; ⁷“Med. Rec.,” Oct. 10, 1895; ⁸“Brit. Med. Journ.,” May, 1897; ⁹“Ugeskrift for Læger,” 1896.

GOUT (Disorders of Eye in).

William Oliver Moore, M.D., New York.

Wagenmann¹ says the changes induced by this diathesis may consist in seroplastic inflammations, with or without excretion of uric acid.

Relapsing opacities of the vitreous are especially characteristic of gout, the blood-vessels may become obliterated by deposits of urates; ribbon-like opacities of the cornea are found in eyes otherwise healthy. Some cases of glaucoma exhibit a relationship to gout.

Scleritis and epi-scleritis, iridocyclitis with deposits between the choroid and retina; it is also the cause of precocious atheroma. Bull² says the changes in the fundus are always bilateral, though rarely symmetrical; degenerative changes in the vessels were at first very minute; hæmorrhages into the retina were observed almost exclusively in the early stages of the disease. An important feature was the peculiar yellowish granular exudation in the retina.

Risley³ says gouty and rheumatic conditions were the commonest causes of chronic and subacute inflammations of the uveal tract. It was not improbable that changes in the nutrition of the *lens* might result from alterations occurring in the blood, as was seen in diabetics, where cataract was present.

REFERENCES.—¹“Deut. med. Woch.,” No. 36, 1896; ²“New York Med. Journ.,” May 15, 1897; ³Ibid.

GRANULOMA OF THE PUDENDA (Ulcerating).

T. Colcott Fox, M.B.

Drs. Conyers and Daniels¹ have drawn renewed attention to a curious disease met with in the West Indies; and Dr. James Galloway² has contributed a report on the histology of the disease. Dr. Conyers did not find it amongst the negroes on the Gold Coast of Africa; but Dr. Daniels states that a somewhat similar affection occurs amongst the Melanesians from the New Hebrides and Solomon islands. Dr. Galloway says the disease commences by the formation of papules,

which may increase and form nodules attaining a diameter of over half an inch. The infiltration producing these small nodular growths is in the cutis, and as it increases it raises and stretches the epidermis overlying it. The nodules have in consequence a smooth shining appearance, and are pinkish in colour. The thinned epidermis may give way on account of the pressure of the infiltration, or abrasions may occur at the summit of the nodule, and in this way superficial ulceration or excoriation of the diseased surface is common. Suppuration of the affected tissues is not a usual complication of the affection. The areas which have ulcerated lose their smooth surface, and assume a granular aspect, which is characteristic of the later stage of the growth. This surface bleeds readily, and gives rise in many cases to a profuse watery discharge. In course of time the nodule is replaced by dense scar tissue, and the lesions gradually cicatrize. The cicatrices resulting are remarkably dense, and as a rule are irregularly pigmented, but when of long standing they may be devoid of pigment. In spite of the firmness of the resulting cicatrix it is not very resistant in its character, for it frequently breaks down at various points, owing to the development of new nodules of granulomatous tissue. Cessation of the newly-formed tissue is an unknown termination. The disease usually affects the neighbourhood of the pudenda in males and females, but may possibly be found in other situations, a point which is not yet accurately ascertained. The part first affected in males is usually the skin of the pubes or the groin; in females it appears almost always to have started on the labia or vagina. The line of extension is defined by a finely nodular margin, and when regions with hair-follicles or sebaceous follicles are affected the nodules are largest, and the lesions most severe. In this way the disease travels along the folds of the skin in the neighbourhood of the genitals, till the groin from one anterior superior iliac spine to the other is implicated, the skin over the pubes being often most severely affected, the femoro-scrotal or labial folds involved, as well as the skin of the scrotum and of the perineum right back to the coccyx. In addition, the smooth skin of the penis may be affected even primarily, and in some cases, especially in the female, the mucous membranes of the genito-urinary and alimentary tracts may be seriously involved by the disease. The direction of the spread of the disease seems to be greatly influenced by the moisture of the surface; thus the folds of the skin are chiefly attacked, and the line of advance may be sometimes determined by the direction of the flow of the discharges from an ulcer. The disease not unfrequently spreads by local contagion. Not unfrequently the hairy part of the pubes, etc., shows advancing nodules of disease, when the smooth

skin of the penis remains unaffected. The duration of cases recorded varies from months to many years. The disease is one of adult life, commencing in all cases after puberty. Dr. Galloway gives some beautiful illustrations of the histology, and concludes that it is not syphilis, tuberculosis, malignant disease, or yaws.

Conyers and Daniels found 30 or 40 grains of **Salicylic Acid** to 1 oz. of **Creasote** most satisfactory. They advise complete excision, where possible. The actual cautery or scraping, followed by such caustics as chloride of zinc, is apt to be a disappointing method on account of the recurrence of disease in scars.

REFERENCES.—¹"Brit. Guiana Med. Ann.," 1896; ²"Brit. Journ. Derm.," April, 1897.

GRAVES'S DISEASE. (See also "Exophthalmic Goitre.")

Henry Handjord, M.D.

Dr. Mackenzie¹ concludes that the **Thymus Gland** possesses no specific action in Graves's disease. He has found it in most cases to have no effect either on the heart, on the goitre, or on the exophthalmos. At the same time it appears to be a remedy of some value in improving the general condition.

Prognosis.—Dr. Williamson² gives the following results: Of twenty-four cases which had been in the Manchester Royal Infirmary, and of which the history could be traced, and in which (excluding fatal cases) the disease had been in existence *at least five years*: Fatal, six; recovery, complete or almost complete, seven; improvement, seven; in *statu quo*, three; following her occupation (exact condition unknown), one—total twenty-four.

Pathology and Treatment.—Dr. Thomson,³ of New York, attributes the phenomena of Graves's disease to the absorption of ptomaines and other products of imperfect digestion from the intestinal tract. He treats his patients, therefore, by **Diet** and **Intestinal Antiseptics**. Meat in any form he considers poisonous in this disease. He prescribes chiefly milk, preferably peptonized or fermented, as matzoon or koumiss, and 4 to 5 pints daily in quantity. Fish, eggs, and bread he allows. Green vegetables and fruits should be avoided if there is any tendency to diarrhœa. The milk diet should be continued for two years at least. Of medicinal remedies he very strongly recommends **Mercurial Purgatives**—a blue pill, followed by a saline once a week. For regular use, **Phenol Bismuth**, gr. 10, two hours after meals, or **Naphthol Bismuth**, or **Salol**, gr. 3, with **Bismuth Salicylate**, gr. 7 two hours after meals.

REFERENCES.—¹"Amer. Journ. Med. Sci.," Feb. 1897; ²"Brit. Med. Journ.," Nov. 7, 1896; ³"Amer. Journ. Med. Sci.," Feb. 1897.

GRAVES'S DISEASE.*Priestley Leech, M.D., F.R.C.S.*

Jonnesco¹ advises total resection of the cervical sympathetic on both sides for Graves's disease, and also as a cure for epilepsy. He removes the three cervical ganglia, and has performed the operation in nine cases, viz., two cases of Graves's disease, three of genuine epilepsy, one of chorea and hystero-epilepsy, one of cerebral tumour with epileptic attacks, a case of hysteria, and one of progressive palsy.

The results were as follows: In both cases of Graves's disease the exophthalmos disappeared and the goitre became less; in one case the tachycardia disappeared, but in the other it remained. In the three cases of genuine epilepsy improvement is now apparent; nine of the patients have epileptic attacks, but one has slight fainting attacks which soon pass off. In the other cases no result was obtained. The various steps of the operation are described, and the pleura may easily be opened in removing the inferior cervical ganglion.

Schulz² reports fourteen cases of this disease which were treated in Kümmell's clinique by partial removal of the enlarged thyroid body. In most of the cases the symptoms were severe and rendered life almost intolerable. Twelve of these patients were completely cured and enabled to follow their employment; in the remaining two cases much improvement took place. Frequent observation of the patients after operation during intervals varying in different cases from two to seven years have convinced Schulz that there is no ground for the objections to partial strumectomy that relapses take place. In one case only was there renewed enlargement of the thyroid.

Jaboulay³ advises section of the cervical sympathetic for exophthalmic goitre. Should failure occur it might be explained by the presence of two sympathetic cords.

REFERENCES.—¹"Centralbl. f. Chir.," No. 2, 1897; ²"Berl. Klinik," June, 1897, quoted in *Epit. "Brit. Med. Journ.,"* July 24, 1897; ³"Lyon méd.," Feb. 7, 1897, "*Progrès méd.,"* July 31, 1897.

GUNPOWDER GRAINS (the Removal of Embedded).*T. Colcott Fox, M.B.*

Edward Jackson recommends the following: Each spot is rapidly destroyed with a fine-pointed **Galvano-Cautery** at a white heat, and if a great number of such touches are required an anæsthetic (chloroform) is called for, or a patch of skin may be attacked after the induction of local anæsthesia by Schleich's method.

REFERENCE.—"Albany Med. Annals," May, 1897.

HÆMATEMESIS. (See "PicROTOXINE." p. 47.)

HÆMATURIA (Malarial).

James Cantlie, F.R.C.S.

TREATMENT.—The treatment of malarial hæmaturia, hæmaturic bilious fever, and malarial hæmoglobinuria presents still great differences of opinion amongst practitioners in the Tropics. Some regard quinine as a specific in the complaint; whilst many consider its exhibition prejudicial in the highest degree.

Guice¹ sums up the treatment of this disease as follows: (1,) Control pain by about $\frac{1}{4}$ grain of **Morphia**, hypodermically; **Atropin** to be added if requisite; (2,) Purge freely, and for this purpose **Sulphate of Magnesia** is the most effective owing to the intense osmosis it sets up, and the copious watery evacuations it causes; (3,) **Oil of Turpentine**, in 10-drop doses, is the sheet anchor in this disease. It is to be administered every three or four hours until the urine is clear; (4,) After the acute symptoms have subsided, the greatest care must be taken to guard against a relapse. This is best done by confinement to bed for at least two or three weeks, the rest thus enforced being as essential as the equable warmth to the surface of the body; (5,) During convalescence it is necessary to support strength and counteract the profound anæmia that invariably ensues. For this purpose Guice prescribes:—

R. Quinina Sulphat.	grs. ij	Potass. Chlorat.	grs. viij
Tinct. Ferri Chlorid.	℥ vj	Syr. Zingib. q. s. ad	℥j
Liq. Acidi Arseniosi	℥ ij		

M. Sig.—In water thrice daily, after meals.

The writer can endorse very fully Guice's line of treatment here set forth. In his experience quinine does harm, and the only reliable drug is the oil of turpentine in 10-drop doses frequently administered.

In this connection it is interesting to notice a report made by Robertis,² who relates the case of a patient who suffered from two paroxysms of malarial fever, and who received 25 grains of quinine in the course of a few hours, the drug being given for the purpose of preventing another attack. A few hours after the last of the quinine had been taken he had a severe chill followed by fever, cyanosis, and headache, and the *urine became bloody*. This was followed in the course of twenty-four hours by jaundice and swelling of the liver. Two days after these symptoms the patient, being entirely free from fever and thinking himself about well, took 12 grains of quinine in three doses, when he suffered from another chill and its consequent symptoms, the urine also becoming bloody.

A number of other similar cases have been reported in American and foreign literature, particularly by Greek and French writers.

Karamitsas,³ of Athens, reported seven cases due to quinine, one

being a child, the others men, and curiously enough six of the individuals were medical men. In all these cases he was able to produce hæmaturia at *will by the administration of quinine*, and further he found that they passed through the *malarial paroxysm without hæmaturia if quinine was withheld, but developed hæmaturia* if this drug was given. Tommasselli and Carreau have also seen similar cases. Finally, Pampoukis and Chomatianos, of Athens, have reported cases in which quinine caused hæmaglobinuria, the salt most frequently producing this symptom being the sulphate.

M. Anthony,⁴ of Bordeaux, describes the treatment of hæmaturic bilious fever. As much as 18 grains of the hydrochloride of quinine were administered subcutaneously; the patient lost the fever but died of subsequent coma. Yet at the end of his report the writer "recommends giving strong doses of quinine as soon as possible in such cases."

The general trend of opinion, however, is against the administration of quinine in the treatment of malarial hæmaturia. The writer (J. Cantlie) is of opinion, gathered from experience of such cases, that quinine is absolutely contra-indicated; that the appearance of blood in the urine is an indication to leave off quinine, and that all attempts to push quinine lays the patient open to collapse and coma. In the "Medical Annual" for 1897 (p. 392) the writer advocated **Turpentine** in 10-drop doses every four hours, and all evidence during the past year tends to strengthen his belief in that mode of treatment.

REFERENCES.—¹ "Alabama Med. and Surg. Age," Aug., 1896; ² "Therap. Gaz.," April 15, 1897; ³ *Ibid.*; ⁴ "New York Med. Journ.," March 27, 1897.

HÆMOPTYSIS.

F. de Havilland Hall, M.D., F.R.C.P.

In all cases of hæmoptysis the important point is to determine the source of the bleeding. In the great majority of cases the blood comes from the lungs, but, as Dr. David Newman⁷ has pointed out, in not a few instances a purely local cause may be discovered, such as "Acute inflammation, and the various forms of ulceration of the mucous membrane (these are causes too obvious to require illustration or remark). The less evident lesions are more likely to be overlooked, such as varicose veins, or small varicose aneurysms in the mucous membrane; very vascular tumours in the larynx, at the base of the tongue, or in the naso-pharynx."

The hæmoptysis which occurs in the early stage of pulmonary tuberculosis is generally due to active hyperæmia, or it may be the result of morbid changes in the walls of the small vessels by nuclear proliferation and alterations in their calibre by the invasion of tuber-

cular growth.² The profuse hæmoptysis of the later stage of phthisis is due to aneurysmal dilatation or necrotic erosion of branches of the pulmonary artery.

The effect of the weather on hæmoptysis has hardly received sufficient attention in the past. Egger³ investigated this subject by means of the records of the Basel polyclinic in 1895, with the following results: The change from good to bad weather, especially in the transition from warm to cold or cold to warm seasons, corresponds with a change for the worse in the condition of many patients with pulmonary disease. In a large number of these cases coughing is increased, and in a small number of such persons the cough causes an increase of pressure in the pulmonary circulation and so favours hæmorrhage. Changes in the weather which favour "catching cold" have similar consequences, as do epidemic bronchitis, influenza, etc.

In reference to the treatment of hæmoptysis I am afraid that Dr. Andrew's⁴ view that it is "eminently unsatisfactory" still holds good. The very length of the list of drugs supposed to be of service in this affection is a proof that few if any of them have much influence over it. To a large extent our treatment is based on empiricism, and until we have more definite information as to the relations between the systemic and pulmonary circulations, it must necessarily be so.

In cases of large hæmorrhage it is better not to keep the patient quite recumbent; he should be in the semi-upright position, or the shoulders elevated. During the intervals between the bleeding the patient should endeavour to restrain the cough, but when the rush of blood occurs, coughing should be encouraged in order to prevent the danger of suffocation. In addition to physical quiet, mental quiet is of immense importance; hence all the relations and friends except one sedate person should be sent out of the room, and a few cheering words addressed to the patient. If the patient is much excited or has a hacking cough, the subcutaneous injection of **Morphin Sulphate** gr. $\frac{1}{6}$ with **Atropin Sulphate** gr. $\frac{1}{150}$, will have a good effect. At the same time the patient may be allowed to suck small pieces of ice, but care must be taken not to cause colic by taking too much. In some cases distinct improvement has followed the application of an ice-bag over the supposed seat of the hæmorrhage; the bag should not be kept applied to the chest for more than twenty minutes at a time. In other cases a mustard-leaf has had a good effect. In cases in which there is much excitement of the circulation, Trousseau's plan of giving **Ipecacuanha** in 10-grain doses every ten minutes, for three doses, vomiting being no counter-indication, will often stop the hæmorrhage at once.

Dr. Desplats,⁵ of Lille, advises, when the hæmorrhage continues in spite of the first measures employed, and when a preparation of ipecacuanha is not at hand or it is not desirable to use it, to take half a glass of water, quickly dissolve in it a tablespoonful of ordinary salt, and give it as a single drink. The effect is sometimes instantaneous. If this does not succeed, ligature of the four members should be the last resort, the ligatures being loosened one by one, giving time for a clot to form, and gradually so as not to increase the arterial tension too rapidly.

Turpentine is an old remedy, but one which is extremely useful where the pulse is feeble. It may be given in 15 to 20-minim doses, rubbed up with mucilage, every four hours for four or six doses. In the less severe forms of hæmorrhage **Gallic Acid** in 10-grain doses every four hours, and the **Acetate of Lead** are two of the most commonly employed remedies. The latter is best given in solution, and if there is much coughing the addition of an opiate is desirable, *e.g.*:—

℞ Plumbi Acetatis	gr. iij	Tinct. Camph. Compositæ	℥xx
Acid. Acetici diluti	℥xv	Aquæ ad	℥j
	Fiat haust.		

This may be given every three or four hours.

The hypodermic use of **Ergotin**, 3 to 10 minims of the official solution being used, is highly praised by some authorities, but I have not seen much good from its use. Amongst the new remedies may be mentioned **Hydrastis Canadensis**, which can be given in 20 to 60-minim doses of the tincture.

Dr. T. J. Mays⁶ calls attention to the great value of **Salicylates**, not in the hæmorrhage of the last stage of phthisis, nor in the trivial bleeding of the lungs the result of a strain, but in those cases in which a profuse and persistent loss of blood frequently occurs, and which are associated with the gouty or rheumatic diathesis. The hæmorrhage may be only slight, or so severe that the patient may bleed to death, or he may lapse into some incurable lung disease. Mays finds that hæmorrhage of this sort is prone to come on at night, and ordinary sedatives and astringents, or cold applications such as ice, are useless in dealing with it. On the other hand, it is really remarkable to see the sudden improvement under the salicylates, even when all other remedies have failed, and when there is the slightest suspicion of a rheumatic tendency a diagnosis may sometimes be made by the administration of the drug in question.

In all cases of hæmoptysis care should be taken that the bowels are relieved daily. Saline aperients by preventing straining at stool and by unloading the portal system diminish the tendency to bleeding.

Diet requires to be carefully regulated. The "hæmoptysis diet" of the Hospital for Consumption is well adapted for the purpose. It consists of milk, $1\frac{1}{2}$ pints; solid beef-essence (or other similar food), 2 ounces; bread, 4 ounces; butter, $\frac{1}{4}$ ounce, in the form of thin sandwiches. Ice to suck. The milk should be taken cold. As the hæmorrhage abates the diet may be more liberal.

REFERENCES.—¹"Brit. Med. Journ.," May 29, 1897; ²"Clin. Journ.," May 17, 1897; ³"Corresp.-Blatt f. schw. Aerzte," 1896, No. 18; ⁴"Harveian Oration," 1890; ⁵"Clin. Journ.," Oct. 21, 1896; ⁶"Philadelphia Polyclin.," vol. v., No. 43.

HÆMORRHAGE.

Priestley Leech, M.D., F.R.C.S.

Reverdin¹ has employed **Sulphate of Soda** internally as a hæmostatic. Its use in this way was first pointed out by Kussmaul. Reverdin has given $1\frac{1}{2}$ grains every hour in the treatment of grave capillary hæmorrhages, whether of traumatic or spontaneous origin. He has also found it of value in menorrhagia. It only produces these effects when injected into the blood or given by the stomach; if used hypodermically it has no effect.

Rapin² has devised a method of stopping arterial hæmorrhage from bone. He uses **Cobbler's Nails** which have been previously disinfected. He drives the nails in and removes them at the end of the operation; but if any vessel bleeds again the nail can be re-inserted and left there. This method has proved of use in Kraske's operation for arresting hæmorrhage from the divided sacrum.

REFERENCES.—¹"Journ. de méd. de Paris," Nov. 29, 1896 quoted in "Therap. Gaz.," April 19, 1897; ²"Rev. méd. de la Suisse Rom.," June 20, 1896.

HÆMORRHAGE INTO PERICARDIUM.

Priestley Leech, M.D., F.R.C.S.

Mr. Mansell Moullin¹ described and showed at the Clinical Society a case of traumatic hæmato-pericardium he had treated surgically.

The patient had received a severe blow over the sternum while playing at football. He was able to go on playing for fifteen minutes, but on arriving at home he suddenly collapsed. At 9 p.m. pulse 60, but the heart apparently beating twice as quickly. Three weeks after the accident he was seized with violent dyspnœa, and then the whole of the left side of the chest was found to be distended and motionless. The heart sounds could only be heard in the right-second interspace. Mr. Moullin then made an incision through the fifth left space and exposed the pericardium which was incised and a drainage tube inserted. Altogether about six pints of blood escaped through the tube within the first three hours, and this clotted firmly in the basin. The

dyspnœa at once disappeared, the tube was removed on the following day and the patient was able to sit up in a week. The left lung remained collapsed for a long time, but now, ten months after the injury, he had returned to work and was again playing football. Mr. Mansell Moullin believed that a branch of the coronary artery must have been the source of the hæmorrhage.

REFERENCE.—¹ "Lancet," Jan. 30, 1897.

HÆMORRHAGE FROM RECTUM. (See "Rectum.")

HÆMORRHOIDS.

Herbert W. Allingham, F.R.C.S., Eng.

Dr. Llewellyn Eliot,¹ of Washington, has published a paper on his use of the *suture-clamp* operation, first devised by Dr. William Erwin. The clamp consists of two arms bent at a right angle at the lower end. The bent portion, which is about one and a half inches long, is provided with a shoulder one-fourth of an inch high and perforated by five small openings. The shafts above the angle are pivoted and serrated to receive a ring which regulates compression and bleeding. When the clamp has been applied and the ring has been slipped along the serrations, the pile is pierced through the needle-holes of the clamp by means of a needle threaded with silk or catgut, and is then excised. When the base of the pile is broader than the length of the clamp, it must be removed in sections. One of the chief advantages claimed for this method is its freedom from hæmorrhage.

In Germany piles have been painted once daily with a 2 per cent. solution of **Nitrate of Silver**, a painless cure being said to result.² Dr. Samways³ has applied **Collodion** to external piles, dropping it on fibres of cotton-wool, which are spread over the piles each morning after defæcation. M. Artault⁴ has used a concentrated tincture of the **Horse Chestnut**.

M. Monin⁵ has employed as an ointment :—

℞ Camph. Lanolin	3ij	Precip. Chalk	3jss
Castor Oil	3iij	Hydrobr. of Cicutine, grs.	xxx

REFERENCES.—¹"Therap. Gaz.," Feb. 13, 1897; ²"Med. Times and Hosp. Gaz.," Nov. 28, 1896; ³"Brit. Med. Journ.," Nov. 21, 1896; ⁴"New York Med. Journ.," Nov. 7, 1896; ⁵"Therap. Gaz.," Jan. 15, 1897.

HAY FEVER.

R. Lake, F.R.C.S.

TREATMENT.—No real advance toward the cure of this affection has been made during the year. The following¹ may be tried as a wash :—

℞ Sodium Bisulphate	1 part	Aq. dest.	5000 parts
	M.		

And Strangways² recommends **Acetic Acid** internally, and also as a nasal wash in the form of a 2 per cent. solution.

REFERENCES.—¹“New York Med. Journ.,” Dec. 12, 1896. ²“Ann. Ophthal. and Otol.,” Jan. 1896.

HEADACHES.

Græme M. Hammond, M.D., New York.

Dercum¹ presents the following useful deductions in the localization of headaches. If due to pelvic disturbances in women they are usually located at the top of the head and are accompanied by soreness of the scalp; if due to digestive disturbances they are occipital or frontal; if to disease of the pharynx they involve the entire vault, as though the pharynx were expanded and extended upwards; if due to migraine they are usually one-sided, local, and accompanied by soreness at the supraorbital foramen; if to eye strain, generally superciliary or frontal, sometimes occipital; if to disease of the nares, between the eyes and extending backwards.

Dewy² speaks favourably of the action of **Methyl Blue** in headaches, particularly those of nervous origin. He gives it in doses of $1\frac{1}{2}$ grains four times a day. The drug is usually well tolerated, and beyond a blue tint imparted to the urine no objectionable symptoms follow.

REFERENCES.—¹“Med. Rec.,” Nov. 6, 1897; ²“Therap. Gaz.,” Jan. 15, 1897.

HEART. (See “Hæmorrhage into Pericardium.”)

HEART DISEASE.

Henry Handford, M.D.

A skiagraph of the heart may be obtained, but this does not readily lend itself to clinical purposes on account of the time which is necessarily taken up with the exposure and development of the picture. But it has now become an accepted fact that the outline of the heart, and to some extent its movements, can be seen by the aid of the Roentgen rays and fluorescent screen. A piece of white paper is fixed to the back of the fluorescent screen, and the outline of the heart is then traced on the paper with a metallic pen introduced between the screen and the chest of the subject.

Dr. H. Campbell Thomson¹ gives the accompanying illustrations (*Figs. 31, 32, 33*) of the normal heart, and of a difficult case of aneurysm under the care of Dr. Sidney Coupland, in which there had been previously much difference of opinion as to the existence of any aneurysm.

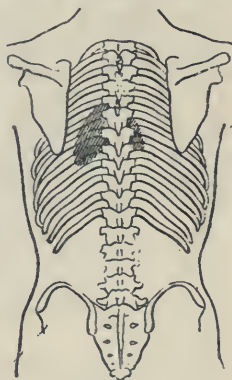


Fig. 31.—Posterior View of the Normal Heart.

Cardiac Dilatation.—Dr. Handford² describes the *effects of alcohol* in producing dilatation as follows:—

In the first place, excessive beer drinking, by the mere bulk of the fluid consumed, keeps the small vessels full, and raises the blood tension. The heart, by its contractions, has to keep a larger mass of fluid circulating against a resistance which is increased on account of

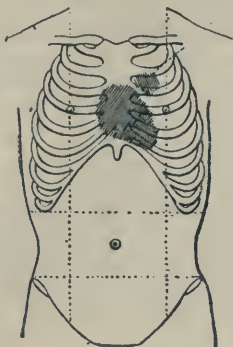


Fig. 32.—Front View of Heart in the case of Aneurysm showing the indefinite shadow above the left border.

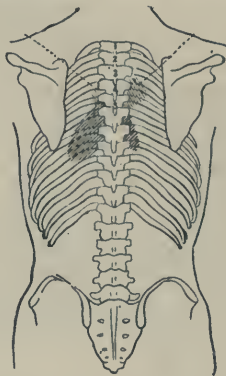


Fig. 33.—Back View of Heart showing Aneurysm situated above.

the contraction of the minute arteries. The mass of fluid that is passed through the blood in twenty-four hours, especially by men living in some of the German towns, such as Munich, is enormous, reaching sometimes 10 to 15 quarts, or even more.

In the second place, the irritating effects of the alcohol and other constituents of beer upon the coats of the small arteries cause muscular contraction, thickening, and the gradual production of arteriosclerosis. In this way the resistance against which the heart has to work is still further raised, and dilatation with hypertrophy results.

And in the third place, the prejudicial effects of alcohol upon the nutrition of the heart muscle, the fatty degeneration of the muscular fibres which it favours, and the fatty overloading with which its abuse is generally accompanied, hasten the process of dilatation and general heart failure.

In the same article Dr. Handford calls attention to the frequency of acute dilatation of the heart from *over-exertion in bicycling*, and gives details of cases.

Dr. Illowny,³ of New York, calls attention to the influence of

gastric irritation in producing cardiac disturbances. "Organic disease of the heart will impair the functions of the stomach as it does those of the liver and of the kidney, and ultimately even organic changes may be produced in that organ.

"Grave cardiac disease may be entirely hidden under the mask of a severe attack of dyspepsia. The sudden impairment of the digestive function, the supervention of a dyspepsia, may provoke disturbances in a heart already diseased. What is not so well known is that functional disturbances of an otherwise normal heart may be produced reflexly by irritation of the stomach.

"These departures in the heart from the normal standard of action have been, so far as observed by me, of the following types: (1,) Disturbances of rhythm, perceptible or not to the person affected; (2,) Dynamic disturbances, recognized by the presence of abnormal sounds or murmurs over the heart; (3,) Painful neuroses."

Dr. David Drummond,⁴ of Newcastle-on-Tyne, publishes a long series of interesting cases illustrating functional heart murmurs, and their mimicry of organic heart disease. He divides them into three classes which he names: The cardio-hæmic or anæmic; the cardio-muscular or neuro-typtic (so-called); and the cardio-respiratory.

- A few points stand out prominently in connection with these mimetic murmurs: (1,) They occur in highly neurotic people; (2,) They are frequently associated with violently acting ventricles independent of lung conditions; (3,) They may be intimately connected with respiration and structural alterations in the lungs; (4,) They are not limited to any cardiac area; (5,) They may be systolic, post systolic, or early diastolic; (6,) They can be diagnosed by an appeal to certain tests, chiefly rest, position and respiratory movements.

Dr. Lauder Brunton⁵ remarks that the temper may become irritable from various physical conditions such as continued ill-health; or it may become temporarily irritable, as in gouty people shortly before an attack of gout. Not infrequently the explosions of temper which occur on very slight provocation are really due to the irritation produced by an accumulation of small irritations, bodily or mental, which have been gradually working up the patient into a state of excitement, and this feeling vents itself in an explosion quite out of proportion to the irritation which has simply let it loose, but has not really produced it. The late Dr. Milner Fothergill used to tell a story of a very irritable old lady who frequently retired to her own room to pray for grace to control her temper, when what she really needed, in Dr. Fothergill's opinion, was a dose of potash to relieve her gout. In some gouty people 20 grains of **Bicarbonate of Potash**, with 10 or 20 of

Bromide of Potassium taken when the feelings of irritability come on frequently soothes it, and it has the further effect of lessening the worry even in those who are not irritable. If this "temper powder," as Brunton calls it, be taken when some irritating occurrence takes place, or some depressing news is heard, it appears to take away the sting of either, so that in place of being much worried thereby, the person feels as if he had slept over the bad news or the worry, and is able to obtain relief by turning his attention to something else. Irritability of temper does not occur in all cases of cardiac disease, but it is by no means an infrequent symptom. The late Mr. Mark Morrow, steward of St. Bartholomew's Hospital, one of the acutest observers that Brunton ever came across, told him that when a patient came down to the office at eleven o'clock at night, and insisted upon his immediate discharge from the hospital, he knew that it was a case of cardiac disorder.

Drs. Horatio Wood and Wm. S. Carter⁶ have made a laboratory study of an extract of **Strophanthus** as well as of **Strophanthin**. They found that the extract was an active preparation, having but little action upon the vaso-motor centres, as compared with what it has upon the heart and vessel walls. Experiments with commercial strophanthin showed that this also is an active substance, more markedly raising the arterial pressure than did the extract. This brings strophanthin very closely into line with digitalis, and takes away much of its supposed advantage in not contracting the small vessels.

Dr. Hare,⁷ of Philadelphia, has found in the treatment of cardiac valvular disease with failure of compensation in children that in a certain proportion of cases the use of **Digitalis** does not produce the good effects usually met with when it is given to adults. While not doubting the usefulness of digitalis in the heart lesions of children, he believes that it must be given even more guardedly than in the case of the adult, and not uncommonly fails to do good. This failure seems to depend upon the fact that cardiac arrhythmia develops, and signs of auricular distension appear as soon as enough digitalis is given to maintain the improvement desired. To such an extent has this been the case that he has almost entirely given up its use in persons under puberty, and resorts to **Strophanthus** in heart lesions and **Alcohol** in heart failure resulting from the fevers such as pneumonia. It is right to add, however, that Dr. Hare sent out a series of questions on this subject to a large number of professors of diseases of children, many of whom considered digitalis quite as useful with children as in adults.

Merklen⁸ states that the effect of digitalis in asystole, in ordinary cases, is a slowing and regulation of the pulse, a more or less copious

diuresis, and a diminution in the volume of the dilated heart, coincident with an increase in its energy. This three-fold action is observed in cases which do well, and its failure, dependent on advanced cardiac and vascular changes, is of evil omen. But, in addition to total failure, incomplete success may be seen. The pulse, notwithstanding free diuresis, may remain hurried, or, despite its slowing during the exhibition of the drug, there may be persistent oliguria and cardiac dilatation. Diuresis without slowing of the cardiac rhythm is seen in an uncommon type of asystole, which results from the compression of the pneumogastric nerves by tubercular mediastinal glands. In these circumstances there occurs a permanent acceleration of the heart's action, which may last for months without causing functional derangements, but which under certain conditions, not as yet precisely defined, may give rise to asystole. On this tachycardia digitalis has no effect, although it causes diuresis if there be present venous stasis and anasarca. But the diuresis is usually of short duration and powerless to remove, in any marked degree, the accompanying œdema. Slowing of the pulse without diuresis points to advanced changes in the myocardium.

The Schott's Treatment of Heart Diseases by Baths and Exercises.—We have heard much less of this method of treatment lately, but it yet appears to have a definite therapeutic value and is largely practised.

The waters used at Nauheim contain iron, large quantities of the chlorides of sodium, lithium, calcium and magnesium, and bicarbonate of calcium, besides considerable quantities of the chlorides of cæsium, rubidium, and potassium, bromide of magnesium, and other rare elements. Their most important characteristic is the large quantity of carbonic acid present (free and in combination). The temperature of the waters varies from 85° F. to 95° F., but the baths are given at a temperature varying from 83° F. to 93° F., beginning at the highest and receding slowly and gradually to the lowest, being guided by the condition and habits of the patient.

The artificial baths, which appear to have quite as good an effect, are prepared as follows: At first a 1 or 2 per cent. solution of chloride of sodium to which a $\frac{1}{2}$ per cent. of chloride of calcium has been added, is employed. Later the strength of the bath is increased. In making the effervescent bath a solution of bicarbonate of soda is used, to which is added, after the bath is filled, a corresponding quantity of hydrochloric acid. The acid must be well mixed with the water of the bath, and after effervescence is established the layer of carbonic acid in the bath on the surface of the

water should be fanned away. The longest stay in the bath should not exceed twenty minutes, and should be followed by an hour's rest.

"Resistance exercises," or "gently resisted movements," are carried out as follows :—

Dr. Schott says that his system consists of slow movements made by the patient and resisted by the operator, short intervals being allowed for rest. The exertion should be small and the patient should be loosely clothed and told to breathe quietly. This matter of quiet breathing is quite important. It must be watched and controlled by the operator. The resistance should not be of such a kind as to prevent the patient from feeling master of the situation. The operator must not grasp or in any wise constrict the limb, but oppose by the hand held flat. The following rules are laid down :—

(1,) Each movement is to be performed slowly and evenly, that is, at a uniform rate.

(2,) No movement is to be repeated twice in succession in the same limb or group of muscles.

(3,) Each single or combined movement is to be followed by an interval of rest.

(4,) The movements are not allowed to accelerate the patient's breathing, and the operator must watch the face for the slightest indications of (a,) Dilatation of the *alæ nasi*; (b,) Drawing of the corners of the mouth; (c,) Duskiness or pallor of the cheeks and lips; (d,) Yawning; (e,) Sweating; and (f,) Palpitation.

(5,) The appearance of any of these signs should be the signal for immediately interrupting the movements in process of execution, and for either supporting the limb which is being moved or allowing it to subside into a state of rest.

(6,) The patient must be directed to breathe regularly and uninterruptedly, and should he find any difficulty in doing so, or for some reason show a tendency to hold his breath, he must be instructed to continue counting in a whisper during the progress of each movement.

(7,) No limb or portion of the patient's body is to be so constricted as to check the flow of blood.

The physiological effect and therapeutical object of these procedures are to accelerate the flow of blood through the vessels, and diminish the work thrown upon the heart, allowing its chambers to contract more readily—hence the importance of attending strictly to the details mentioned.

When baths are employed, exercises should be given once a day. When, however, exercises are used without baths, the exercises, though given once a day at first, may later be employed twice daily.

Under all circumstances begin slowly, giving from five to ten minutes of exercise at the outset, and increase gradually until you have reached thirty minutes. When exercises are given twice daily the second exercises should not exceed fifteen or twenty minutes. The time indicated includes the pauses as well, so that in thirty minutes about eighteen minutes are taken up by the exercises themselves.

The counter-indications against the treatment in the entire range of chronic cardio-vascular affections are advanced arteriosclerosis, decided degeneration of the cardiac muscle, and aneurysm. Some of the conditions earlier deemed counter-indications are not now so considered.

It is claimed for this treatment that during the baths and for some time subsequently the pulse rate is slowed by five to twenty beats per minute according to circumstances. Upon this point there is general agreement. It is also claimed that as a result of the baths and of the exercises very great diminution in the size of the heart, especially of a greatly dilated heart, rapidly takes place. Upon this point there has been much dispute, depending chiefly, apparently, upon the advocates of the Schott treatment employing "auscultatory percussion," and the opponents, "simple percussion." That many cases have benefited by the treatment is undoubted.

In respect to the directions given by Schott, it may be stated that Dr. Percy Wilde so far back as 1880 ("Edin. Med. Journ.") demonstrated that it was the natural process to hold the breath during an effort, and that even in the case of the involuntary motions of the hand the unconscious movement to overcome an obstacle invariably took place at the end of inspiration, and before the act of expiration commenced. He claims that by a resisted movement while the glottis is closed we can directly stimulate the cardiac muscle much more effectually than by the use of the Swedish movements used by Schott. 'Yawning' is an involuntary act performed to stimulate the flagging heart, and if the *modus operandi* of the act is observed it will be found to consist of a forced muscular effort when the chest is fully expanded and while the glottis is closed, expiration taking place at the termination of the movement. Wilde's method for the physical treatment of the heart and lungs is based upon this natural and involuntary act, and he claims that from six to ten movements will have an immediate effect in slowing and increasing the force of the heart's beat in cases of rapid pulse, or tachycardia. As the movements only occupy a few minutes, they can be given by the physician himself. The method of giving this exercise is fully illustrated in the "Medical Annual," 1892, p. 392. The same exercise, used with greater resist-

ance and fuller inspiration, is used by Dr. Percy Wilde in the treatment of phthisis.

Dr. Gendre¹⁰ recommends the application of an **Ice-Bag** to the præcordium in the cardiac complications of the several acute infectious diseases. He states that an ice-bag or small bladder containing cracked ice in small quantity should be applied, care being exercised that too much pressure is not produced. The ice-bag should be separated from the skin by one or two layers of flannel; without this precaution cutaneous erythema will soon develop. As a general rule, the patient finds at once that the application is comfortable and desires its further employment, and palpitation of the heart, which may have been exceedingly marked, is greatly improved. Thus it is frequent to find that the pulse on the first day will be 140 to 150; on the second, 120; on the third, 100; and on the fourth day of the application it may be only 80; the pulse is more forcible and no longer filiform and undulating, and any excess in cardiac action is quieted. The heart's action is more regular and its contractions are more energetic.

REFERENCES.—¹"Lancet," Dec. 12, 1896; ²"Med. Press and Circ.," March 24, 1897; ³"New York Med. Journ.," April 24, 1897; ⁴"Lancet," April 10, 1897; ⁵"Practitioner," July, 1896; ⁶"Amer. Journ. Med. Sci.," Feb. 1897; ⁷"Therap. Gaz.," April 15, 1897; ⁸"L'Union méd.," p. 610, No. 51, 1896; ⁹"Med. Rec.," Dec. 12, 1896; ¹⁰Ibid., March 13, 1897.

HERNIA.

Priestley Leech, M.D., F.R.C.S.

Several interesting papers have been published on the radical cure of hernia during the year.

Bassini's operation with perhaps slight modifications appears to be the favourite operation on the Continent and in America. It does not, however, seem to be much practised in England.

Mr. Marmaduke Sheild¹ gives a list of cases of strangulated hernia and radical cure of hernia. Out of thirty-six cases of radical cure there were three relapses, and one case died from sepsis. The sac was drawn down as far as possible and tied flush with the internal ring, torsion of the sac having being also done in most of the cases. The walls of the canal were drawn closely together by a succession of sutures passed so as to aim at drawing the transversalis aponeurosis and the conjoined tendon to Poupart's ligament and the external oblique. MacEwen's method of passing the sutures has been practised. In some bad cases where the opening in the abdomen has been direct and large enough to admit four or five fingers, Sheild closed it as in abdominal section, sewing the peritoneum and muscles deliberately together with fine silk. The sutures for the sac and

ring were kangaroo tendon in the earlier and boiled silk in the later cases.

McAdam Eccles² out of a large number of operations on non-strangulated herniæ in persons of all ages, states the mortality is nearly 5 per cent. He considers the wearing of a light truss for one year as an essential, and he thinks that methods (like Bassini's) which open up the whole inguinal canal have the very great objection of being liable to leave the canal weaker than before.

Coley,³ of New York, gives the results of three hundred and sixty cases of the radical cure of hernia. Since August, 1891, with few exceptions, he has employed Bassini's operation for inguinal herniæ, and with increasing satisfaction. All but thirty out of the three hundred and sixty cases have been traced. There was only one death, a mortality of .28 per cent. due to double pneumonia probably caused by ether. The three hundred and sixty operations were divided as follows: three hundred and twenty-six inguinal; twenty-five femoral; six umbilical; three ventral.

He thinks the operation in children has been too much neglected; the mortality, taking Broca's, Felizet's and his own cases, eight hundred and thirty-two cases with four deaths, is less than $\frac{1}{2}$ of 1 per cent. The percentage of cures is also higher than in adults. He would caution against operating on very large irreducible herniæ, especially in stout persons; the operation is a formidable one and few, in his experience, are permanently cured.

Miller⁴ draws attention to the conflicting methods for the radical cure of hernia. He has employed almost every method, but has mostly preferred the simpler ones. He thinks that the method does not matter very much if we take away the sac actually or potentially, close the ring and keep it closed for some weeks. Rest and time are the main aids on which we should depend for a satisfactory result, and the secret of success lies in keeping the patient *in bed for six weeks* after the operation. Coughing will, however, defeat any attempt at the radical cure of hernia.

Kocher⁵ says that Bassini's operation in certain cases is harmful, and if suppuration takes place it does not give good results. He describes a modification of his method as follows: The sac is separated as usual and 1 cm. above Poupart's ligament at the level of the internal ring a small opening is made in the fascia of the external oblique; through this opening the fibres of the internal oblique and transversalis muscle are separated, and the peritoneum is then seized with forceps and opened with a small incision, and the sac is invaginated through this opening so that its peritoneal surface is external,

and no dimpling of the peritoneum can thus be left. The sac and the edges of the peritoneal opening are held with forceps and transfixed with a ligature which is then tied on both sides, and the little peritoneal wound is thus closed. The small incision in the external and internal oblique can be closed with one or two sutures.

Dr. Otto Simon⁶ gives the results of radical operations in both inguinal and femoral hernia in Czerny's clinique. He describes the various methods which have been used for the radical cure of inguinal hernia. In most cases Czerny's operation was performed, but cases were also operated on by the methods of Bassini, MacEwen, Bottini and Wölfler. It is difficult to decide which is the best operation, but Simon thinks Bassini's gives the best results. Details of the operations on strangulated and non-strangulated herniæ are given. Catgut was used in the immense majority of cases for the deep sutures.

Ludwig⁷ gives details of one hundred and forty-nine cases of inguinal hernia in Von Hacker's clinique at Innsbruck; one hundred and forty-three of these were non-strangulated and six were strangulated. Of the one hundred and forty-three operations, primary healing took place in one hundred and thirty (90·91 per cent.), healing by granulation in twelve (8·9 per cent), one died through pyæmia (0·7 per cent.). Of the six strangulated herniæ five gave primary healing; one died from peritonitis due to perforation—a death rate of 16·66 per cent. All these were treated by Bassini's operation. He recommends chloroform as the anæsthetic and not ether, as the latter may give rise to coughing. Three were performed under anæsthesia by Schleich's infiltration method with the best results; no suppuration occurred, and no vomiting; the absence of this latter is a great point in favour of this method of anæsthesia. Enquiries as to the final result were only answered in 63 per cent. of the cases, and among these no return of the hernia had taken place.

REFERENCES.—¹"Lancet," p. 375, vol. ii, 1897; ²"Clinic. Journ.," Nov. 18, 1896; ³"Annals of Surg.," March, 1897; ⁴"Practitioner," May, 1897; ⁵"Centralbl. f. Chir.," No. 19, 1897; ⁶"Beitr. f. Klin. Chir.," Bd. xvii, Hft. 2; ⁷Ibid., Bd. xviii, Hft. 3.

HERNIA (Irreducible).

Priestley Leech, M.D., F.R.C.S.

Mr. Warrington Howard¹ read a paper before the Royal Medical and Chirurgical Society on this subject. The causes of irreducibility in eighty-five cases were: thickened and adherent omentum, thirty-one cases; adhesion of omentum to sac, thirty-four cases; twisting of omentum, one case; cysts in omentum, one case; adhesion of intestine to sac, twelve cases; adhesion of coils of intestine, four cases; large amount of intestine, three cases; other causes, five cases. In a

few cases more than one of the above causes of irreducibility was present. The conclusions come to were :—

(1,) Irreducible hernia is a condition of serious danger, the gravity of which increases with its duration or neglect ; (2,) The application of a truss upon an irreducible hernia is not only useless but harmful ; (3,) Irreducible herniæ, which consist wholly or in part of bowel, are very apt to become strangulated ; (4,) That herniæ, consisting wholly of bowel, upon which no truss has been worn may (even when of large size and of considerable duration) generally be returned by appropriate treatment ; (5,) Where proper treatment fails to reduce herniæ, the great majority are irreducible because of adhesions of, or changes in, the protruded viscera—conditions which are remediable by operation only ; (6,) The most common cause of irreducibility is the presence of adherent omentum in the sac ; (7,) The presence of irreducible omentum in the sac of a hernia is a source of constant danger which can be remedied by an operation of extremely small risk ; (8,) Herniæ containing irreducible bowel are more dangerous than those containing only omentum, and that as the danger of operation increases with the magnitude of the hernia and with the occurrence of adhesions, these herniæ should be operated upon as soon as they are proved to be irreducible by the failure of proper treatment.

REFERENCE.—¹ "Lancet," May 29, 1897.

HERNIA (Ventral).

Theophilus Parvin, M.D., Philadelphia.

Treatment of Ventral Hernia following Abdominal Section.—Dr. Andrew F. Currier, at the last meeting of the American Gynæcological Society, recommended the following method of operating : A strand of coarse wormgut, twelve inches or more in length, is inserted at each end, in a strong curved needle, the needles being long enough to penetrate the abdominal wall. Each needle is introduced just beyond the upper angle of the wound, half an inch apart, from without inward. The sides of the wound are brought into apposition by continuous suture, including peritoneum, fascia and muscle from below upward, and then from above downward. If two sutures are used, one for each half of the wound, the ends of each must penetrate all the tissues, and emerge near the middle point of the wound. After these ends have been tied, each to its appropriate fellow, the gaping skin is closed by continuous, or interrupted sutures.

A minor practical point consists in protecting the skin at the beginning and ending of each suture by a thin strip of gauze, which is passed under each loop. The wound is sealed with iodoform, collo-

dion, or not. Dressings are changed at the end of two days, and the superficial sutures removed, the deep ones not before two weeks. The patient stays in bed until a few days after removal of the sutures.

HERPES ZOSTER.

T. Colcott Fox, M.B.

Eichhorst¹ refers to eighteen recorded cases of *zoster with facial paralysis*, and describes another. In all but three the herpes has preceded the paralysis, and then *H. occipito-collaris* has been most frequently seen. When the facial paralysis has appeared first, the herpes has been in the distribution of a single branch of the fifth nerve. Howard Murphy,² in adding two further cases from his own practice, surmises that this combination is more frequent than would appear from these records. In one of his cases the herpes and paralysis were on opposite sides. Murphy refers to the severe cases mentioned by Hyde, some ending in pyæmia and death. It must be remembered that herpes of the face may be the result of very grave lesions.

Gastou³ believes that there is a *herpetic fever or pseudo-varicella herpetiformis*. He details the case of a child with moderate fever, some nasal catarrh and cough, and general malaise, in whom appeared about the second day a vesicular eruption of the tongue, palate and fauces and the neighbouring skin. The affection only lasts a few days. It seems to be contagious, and flourishes in the fall and spring. The reporter would add that cases of this kind certainly appear to occur in epidemics. They are described as vesicular stomatitis, and under other names. There is also the condition described as foot and mouth disease in human beings.

Leloir found the following useful for the pain of herpes zoster :—

R Alcohol	3j	Ext. Cannabis Indic.	gr. xxv
Menthol	gr. xv		

To be applied by means of wadding pads frequently renewed.

REFERENCES.—¹ "Centralb. f. inn. Med.," May 8, 1897, epitomized in "Brit. Med. Journ.," June 12; ² "Brit. Med. Journ.," Aug. 21, 1897; ³ "Journ. de clin. et de théér. infan.," 1897.

HIP (Amputation of).

Priestley Leech, M.D., F.R.C.S.

Prevention of Hæmorrhage.—McBurney¹ says loss of blood during amputation at the hip joint is of especial importance, because the operation is indicated in two classes of cases: (1.) Those suffering from extensive and often long continued disease and who are therefore feeble and anæmic; (2.) Traumatic cases weakened by the shock of the traumatism and usually anæmic from considerable blood loss. In his last three cases, all of which have recovered, he has used

the following method : First, as much blood as could be safely returned to the body from the limb to be amputated by means of position or elastic bandage was so returned ; then an incision was made through the abdominal wall about one and a half inches internal to the anterior spine of the ilium. In the last two cases this incision was made by separating the aponeurotic and muscular fibres according to the plan suggested in operating in appendicitis. Through this incision an assistant passed his index finger and readily reached and compressed the common iliac artery. This plan recommends itself on account of its simplicity, its certainty, its aseptic character, and because it can be applied to cases that require that the deeper tissues should be severed at an unusually high level. It has also the advantage that *all* the smaller arteries in the stump can be readily identified and ligated. It is only necessary to lift the finger for a fraction of a second ; this ensures the application of a ligature to every small vessel, some of which might otherwise escape detection and subsequently bleed into the dressing.

REFERENCE.—¹ "Annals of Surgery," May, 1897.

HIP (Congenital Dislocation of the).

{ *A. H. Tubby, M.S. Lond., F.R.C.S.*
 { *Robert Jones, F.R.C.S. Ed.*

Before entering upon this subject, it is well to clear the ground a little ; for instance, unskilful or violent delivery in breech presentation resulting in dislocation at the moment of birth, cannot be classed as congenital. That such accidents may occur is shown by some experiments of Melicher at Vienna, upon women who had died undelivered. In six trials he found that with the fingers or hook it was possible to produce a luxation. In two instances in which the displacement was unilateral, the dislocation was in that hip to which greater traction had been applied. Reduction in these cases was effected with the greatest difficulty. Cases such as these are acquired and not congenital displacements.

The affection is not very common, but it seems to occur more frequently abroad and in America than in England. It is met with seven times more frequently in the female than in the male sex. The proportion of bilateral and unilateral cases is about equal.

In our opinion, congenital displacement of the head of the femur which dates from intra-uterine life, or which is observed immediately after birth without signs of traumatism, is produced by mechanical action which is largely favoured by the presence of a mis-shaped acetabulum or by an absence of the posterior border of the cotyloid cavity. This displacement, which is frequently partial, is rapidly

transformed into a complete one, it may be by the weight of the body, or it may be by muscular contraction.

It is well known that this deformity is hereditary. There is one case recorded of a man who was affected in this way and had two daughters, the younger of whom had a unilateral displacement, and the elder a double displacement. In another case a father affected on the left side had one daughter who was also affected on the same side. Yet another, a mother well-formed, had ten children, amongst whom were two daughters afflicted, one with double, and the other with single luxation; a granddaughter had nine children, one of whom had a unilateral displacement. These examples, rare though they may be, suffice to establish the *hereditary* nature of the affection.

Pathological Anatomy.—In some instances the acetabulum is entirely wanting, and in such there is found in place of the cotyloid cavity above the anterior superior spine a circular surface more or less plane, the size of the extremity of an average index finger and covered with thick fibrous tissue. At the posterior border is sometimes found a small crest which corresponds to the posterior superior border of the acetabulum. Such cases as these are somewhat rare. More often there is found during the course of an operation where the normal acetabulum should be, a convex mass of bone. Such a condition was found in one of our own cases, in which we performed the operation according to Lorenz's method and exposed the cavity of the acetabulum. The clinical importance of this condition is twofold. In the first place, the position of the artificial acetabulum to be formed is clearly indicated, and in the second place there is sufficient thickness of bone for that purpose.

In complete contrast with the preceding are those cases in which the cotyloid cavity is present but deficient in various ways. Sometimes it is found of nearly, if not quite, the normal depth, but not of circular shape. The most frequent form is that of an isosceles triangle, with its base upwards and forwards. This is clearly due to non-development of the ischial part of the Y-shaped cartilage. The cotyloid cavity has been seen of the normal circular shape, but deficient in depth and deficient as to its borders. From numerous observations of these cases we can make this statement, that during the first twenty years of life the complete absence of the cotyloid cavity is as rare as its perfect formation. To particularize the abnormalities they may be summed up as follows: In depth, the acetabulum is frequently shallow and does not more than suffice to admit the tip of the index finger; in shape it is sometimes circular, but more often triangular. The want of depth is due to two causes. In the first place the os innominatum

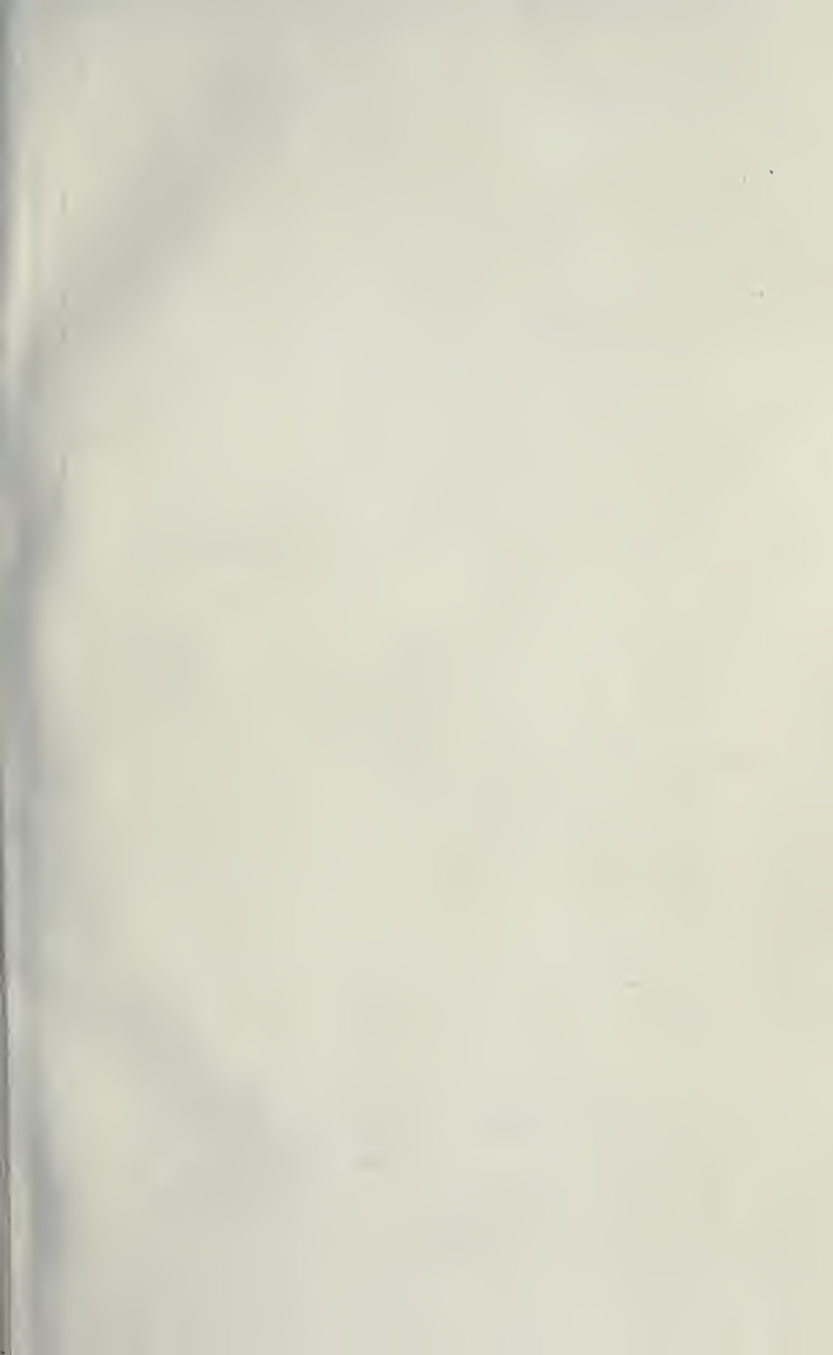


PLATE V.

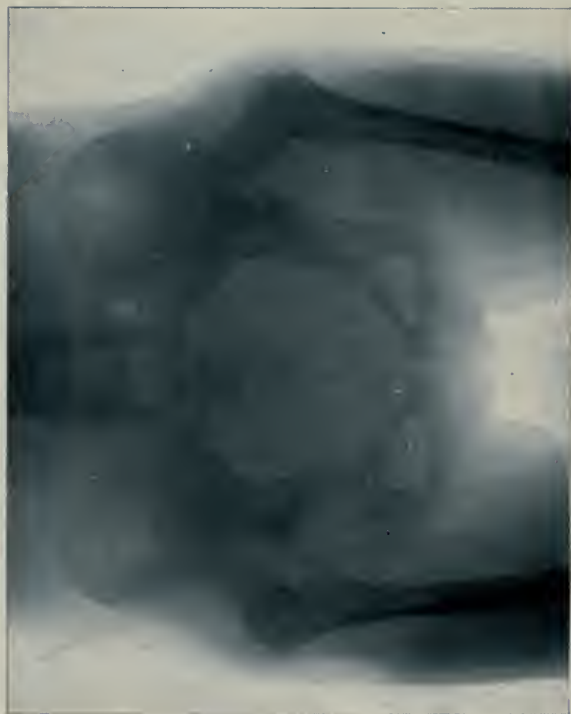


Fig. A.—Skiagraph showing double dislocation. On right side the dislocation is upward and backward, and on left upward and slightly forward.



Fig. B.—Enlargement of right side of *Fig. A.*

is not sufficiently hollowed out, and in the second place the borders of the acetabulum have not grown up sufficiently around the head of the femur. More especially so is this with the postero-superior border. The observations of Lockwood and Bowlby have shown that for the development of a normal acetabulum it is essential that the head of the femur should be at rest at one spot on the outer surface of the os innominatum, and that around the head the margins of the acetabulum should grow up more or less equally in all directions. During the first two months of intra-uterine life, if the head of the femur be constantly moving over the outer surface of the opposing bone, then little or no acetabulum is formed. If, on the other hand, it moves but slightly, the movement is generally in the posterior or postero-superior direction, and in such cases we take it that it is that border of the acetabulum which will be found wanting. We would insist upon this point that in the majority of cases of congenital displacement, whatever other changes may be found, that which is most important and most constant is the absence or imperfect development of the border above-mentioned which allows the head of the femur to telescope up and down. If this border is defective the acetabular cavity is almost continuous with a flat surface on the iliac bone sometimes covered with cartilage, which indicates the new position taken up by the displaced head, and Paletta has described a case which has become classical in which in a direction upwards and backwards from the acetabulum there were three distinct smooth surfaces indicating the three positions occupied by the head of the femur at different times during life. It has also been shown by microscopical observations that the edges of the Y-shaped cartilage are much hypertrophied, and indeed this corresponds with the great thickness of the pelvic bone in the infant at that spot. So much so is this the case that on looking at the interior surface of the pelvic bone a distinct convexity is found. It is this observation which has encouraged and stimulated the various efforts that have been made to deepen the acetabulum, and no doubt in some cases it is an important factor in the success of this procedure.

The *upper extremity of the femur* frequently shows important departures from the normal (*Figs. 34, 35, and 36*), and such departures may be of greater importance than changes in the acetabulum, since it is possible in many cases by curetting and otherwise deepening the latter to triumph over the difficulties; but profound changes in the head of the femur are almost irremediable from the point of view of securing a moveable but good joint. The most striking abnormality is a general atrophy of the upper extremity, and again in some cases it is distinctly absent. Such an

instance was found in a woman, aged sixty-five years, who had suffered from congenital dislocation of the hip. Occasionally the growth of the head is retarded in such a way that the head of a femur belonging to a child of ten years will only be as large as that of a normal five year old



Fig. 34.—Upper extremity of femur from a child, aged eleven (*after Lorenz*). Notice altered shape of the head, loss of obliquity of the femoral neck, and forward twist of the proximal part of the neck.



Fig. 35.—Similar part from a child, aged fourteen years (*after Lorenz*). The conditions seen in Fig. 34 are much exaggerated, and neck of femur is quite horizontal.

child, and as age progresses the disparity becomes more and more marked until, finally, as Morris remarked, in old age the head may be entirely wanting. During, however, the first twenty years of life, the

change in shape is not marked, although the head of the femur remains small, and it is important to recognize this fact so far as treatment is concerned. In addition to its diminution in size the femoral head presents other alterations. One of these is a flattening of its posterior aspect where it rests against the os innominatum (*Fig. 36*).

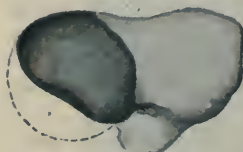


Fig. 36.—Bird's-eye view of upper extremity of femur, showing the flattening of the caput femoris on its postero-internal aspect (*after Lorenz*).

In every case the neck of the femur is considerably shortened and altered in direction. As age advances it becomes less obtuse, and is finally horizontal. It is further atrophied and appears to be merely an isthmus connecting the head and the

great trochanter (*Fig. 37*). In the altered direction of the neck of the femur and the smallness of the head, together with the luxation of the cotyloid cavity, must be sought an explanation of the shortness of the limb. But the above changes in the neck of the femur are not the only ones. There is another which has recently been recognized as of grave importance from a therapeutic point of view. It is the version which frequently exists in the neck in such a way that the head of the femur is, so to speak, turned forwards or backwards in its relation to the great trochanter. The significance of this pathological version is most readily appreciated in treating cases by forcible reduction. It is frequently found that the head can be replaced in its normal position, but that the foot remains inverted or everted. This undoubtedly is due to the version of the neck, but in children it may be readily got over by twisting the knee and ankle in such a way as to bring the foot to the front when the head is in the acetabulum.

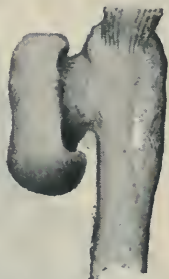


Fig. 37 — Extreme deformity of head and neck of femur in an adult (*after Lorenz*).



Fig. 38.—Interposition of the capsule between the bones is well seen (*after Lorenz*).

The *round ligament* has been found in various conditions, occasionally thick and solid, as if it had helped to support the body-weight, more often elongated and attenuated, and frequently absent (in about 83 per cent. of the cases), or even merged into the joint capsule at the anterior part. The *capsular ligament* is in most cases elongated. In some it has undergone remarkable thickening, and may partially serve to support the weight of the body. In other cases it is dilated and thinned, and has been found doubled up between the bones (*Fig. 38*). Sometimes it has a curious hour-glass shape, and is obliterated in the middle. This condition is only seen when the round ligament has been destroyed. The upper insertion of the capsular ligament embraces both the new and old cotyloid cavities. In some instances in adults the capsule wears away and the round ligament is destroyed. The

caput femoris then comes into immediate contact with the periosteum of the ilium and forms, according to R  dard, a new and sufficiently perfect cavity for the reception of the head, with definite margins ; while the old cavity becomes more and more distorted (*Fig. 39*).



Fig. 39.—Nearthrosis.

Bradford and Lovett remark that the new cavity is often deep enough to form a good support, and the pressure of the head of the femur in this new position causes absorption of the periosteum in that situation, and the capsule finds a new attachment in the osteophytes thrown out to form a new cavity in favourable cases. This is the object of Paci's method of treatment in those cases in which the head cannot be replaced in the acetabulum.

Changes in Muscles.—These may be summed up as follows :

Those muscles which pass from the pelvis to the great trochanter and to the outside of the thigh, that is, the abductors and most of the external rotators, are lengthened on account of the great trochanter being, so to speak, pushed outwards as it ascends ; while the adductors are shortened. For the elucidation of this point we are indebted to Lorenz, who adopted it as the first essential in his line of operative treatment. The ilio-psoas undergoes a very considerable change of direction in those cases in which the head passes upwards and backwards. Instead of lying over the head and neck of the femur it comes to pass more and more internally, and lies over the anterior border of the cotyloid cavity ; and finally, as the head becomes more displaced, it actually passes over the posterior border, and no doubt serves in that way as a means of perpetuation of the displacement (*Fig. 40*). The new position may also account for the curious hour-glass shape of the capsular ligament.

The Direction of the Displacement.—In the majority of cases it is above and posterior, but as the subject is studied more carefully the number of anterior displacements is found to increase. We have observed during the past three years no less than eight anterior displacements (*Plate V, Figs. A, B*). By anterior we mean those that lie in front and above, and somewhat internal to the upper border of the



Fig. C.—Lordosis, frequently seen in double dislocation.



Fig. D.—Back view of *Fig. C.* Note prominence of trochanters and feeble muscular development of buttocks and thighs.



Fig. E.—Unilateral dislocation (left side), with on-coming scoliosis

acetabulum. In some cases the displacement is directly upwards, and in one rare instance the head was found below and internal to the site of the acetabulum.

Is the spontaneous formation of a new joint possible? The opinions of Réard and of Bradford and Lovett have been quoted above. The

chief obstacles to the formation of an arthrosis which will be capable of sustaining the body-weight are as follows: First of all the action of the body-weight perpetually tending to push the head of the femur further out of its place. Secondly, the interposition between the periosteum of the ilium and the head of the femur of the thickened capsule and of the elongated round ligament. And, thirdly, the constant adduction of the hip in such a way that the head of the femur loses its contact with the iliac bone; the weight of the body being supported exclusively by the fibrous tissue of the capsular ligament

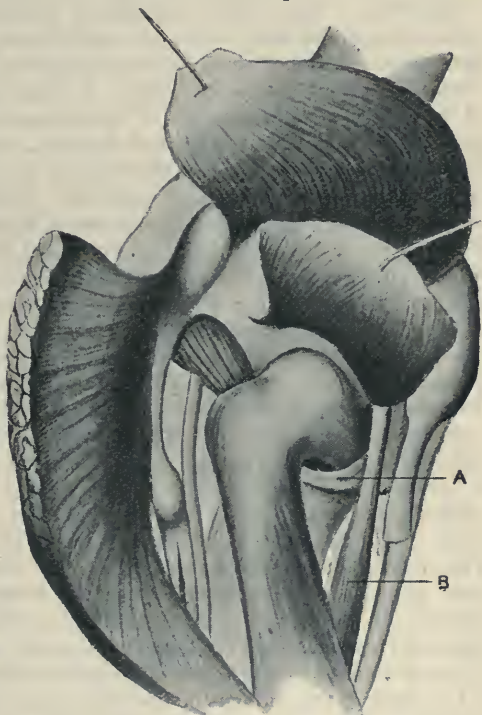


Fig. 40.—Showing altered shape of the head of the femur, loss of obliquity of the neck, and new position (A) of the ilio-psoas and (B) the rectus (after Lorenz).

and by the muscles. In all cases of congenital dislocation there is produced a new articular cavity of a form sufficiently large to receive the head of the femur; but unfortunately this cavity is not osseous, but fibrous, and is formed, in effect, by the thickened portion of the capsule which invests the head. In the place of that part of the acetabulum, namely, the posterior border which is wanting in bone, there is found a thickened portion of the capsular ligament. Against this the head

rests, but the thickened fibrous tissue does not often undergo ossification. As the head pushes more and more against it, it continually retreats further upwards along the surface of the iliac bone. We do not know of any veritable account in which a spontaneous new joint has been formed.

Symptoms.—The mode of walking is as follows : The patient first raises himself somewhat on his toes and inclines the upper part of the body towards that foot which is chiefly supporting the weight. Then the other foot is slowly carried forward. At that moment the trochanter of the limb on which the weight of the body mainly falls, can be felt to move upwards towards the crest of the ilium, and then resumes very nearly its former position when the weight is taken off that side. When running, the waddling gait is not so marked. Lordosis is present on account of the disturbance of the equilibrium of the body (*Plate VI, Fig. C*). The vertical line of the centre of gravity of the body is behind its normal position, and the trunk tends to fall backwards. To compensate this the lumbar region is arched and the abdomen protruded. Very striking is the disproportion of the lower limbs to the general bodily development. When the patient's hands are placed by the side they reach lower down on the thighs than in a well-proportioned individual. The muscles of the lower extremity are small and ill-developed, and the appearance is exaggerated by the want of proportion between the size of the pelvis and lower limbs. The pelvis itself appears broader than is natural. The great trochanters are unduly prominent when the child stands, and they are near the crests of the ilia, being sometimes displaced upwards to the extent of more than two inches. The gluteal muscles form a cone, the base of which is at the ilium and apex at the great trochanter, so that the tubera ischiorum are not covered by muscles. The heels also are rotated inwards while the toes point outwards, and the knees are brought together. Abduction of the limb is somewhat limited in dorsal displacements.

On placing the patient in the recumbent position the lordosis disappears and the tops of the great trochanters are not so near the crests of the ilia as when the patient is standing. The upper borders of the trochanter are, however, in all cases above Nélaton's line. If the limbs be measured from the anterior superior spine of the ilium to the internal malleolus, there is considerable shortening found. But if the measurement be taken from the upper margin of the great trochanter on the affected side in a unilateral case, the actual length of the affected limb is but little, if any, less than natural. Much of the shortening of the limb may be made to disappear in infants and in children by steady traction on the affected limb. If

PLATE VII.



Fig. F.—Side view showing lordosis.



Fig. G.—Same patient, showing disappearance of lordosis in flexion of thighs.

while making traction, one hand of the surgeon be placed on the prominent trochanter, it can be felt to descend and almost touch Nélaton's line. This telescoping is a most important point in diagnosis. Many of the points above-mentioned can be seen in *Plates VI and VII*.

In a unilateral case, in walking, a very decided limp on the affected side is seen. The shoulder on that side is lower than the other, while the trunk inclines to the sound side. The disproportion in size of the affected limb, the wasting of the gluteal muscles, the prominence of the trochanter, the upward displacement of its head and the diminished measurement from the anterior superior spine are readily appreciated by comparison with the sound side. As negative signs, there are : Total absence of pain, no limitation of movement in young children, and but little limitation in adolescents.

It is very important early to recognize these cases for the following reasons : Firstly, as to the possibility of cure. The earlier treatment is commenced the more likely is it to be successful ; especially is this so if it be begun before the child has walked, before the caput femoris has become much displaced with the accompanying elongation of the capsular ligament. Secondly, unjust accusations have been made against nurses and others in charge of children, the subjects of deformity, of their having been allowed to fall. A careful examination of the case will readily disprove any such accusation. Thirdly, on account of the want of early and complete recognition an incorrect diagnosis is often made, and the patient may be wrongly treated for some considerable time.

Diagnosis.—In the first place it is necessary to be quite certain that the displacement of the head of the femur is really congenital, and not due to traumatism at birth. In the history the points which will assist the formation of an opinion as to the congenital nature of the deformity are the possibly hereditary nature of the affection in any individual case, the onset of limping or waddling *without pain* when the child commences to walk. One must be careful not to accept too readily the assertion of the parent that the child has had a fall. If the affection is bilateral it is easier to form an opinion than when it is unilateral. But even in the former case mistakes have been made and confusion has arisen by the following conditions. The unusual deformity, known as coxa vara, sometimes simulates congenital displacement, but in coxa vara, although the great trochanter is displaced above Nélaton's line, it cannot be drawn down by traction on the limb, and the head of the bone can be felt in its normal position. The waddling gait and the prominence of the trochanter in coxa vara, together with the

difficulty in abducting the limb, have caused the two affections to be confounded. But in coxa vara there is no flexion of the thigh, and no muscular wasting. Pseudo-hypertrophic paralysis has in some cases given rise to difficulty on account of the presence of lordosis and the imperfect balance of the body. But again in pseudo-hypertrophic paralysis the head of the bone is in its normal position ; the trochanter is not excessively prominent ; many of the muscles, such as the gastrocnemius and extensors of the thigh are seen to be hypertrophied, while others, such as the lower part of the pectoralis major, the latissimus dorsi and the teres major are atrophied, and the peculiar movements of the child affected with this form of paralysis, on rising from the horizontal to the vertical position, are diagnostic, and it is well known that the child climbs up himself in rising from the couch to the standing position. Generally in bilateral cases of congenital displacement the diagnosis is easy ; but in slight cases of displacement, and especially in young children, the lordosis and undue prominence of the gluteal region are not marked, and it is difficult to be sure sometimes if the upper margin of the trochanter be on Nélaton's line or not.

When the displacement is unilateral the difficulties of diagnosis are much increased, especially in slight and early cases. But great reliance can still be placed on the abnormal position and rounded shape of the head, its excessive mobility, and the ease with which it can be made to move over the external surface of the os innominatum, or in cases of anterior displacement over the pubes. The absence of pain in walking, the freedom of movements of the hip, together with the disappearance of shortening on gently drawing down the affected limb, are characteristic. The diagnosis, however, has to be made from coxitis, especially when the head of the femur has undergone pathological dislocation ; but a careful enquiry into the history of the affection as to its onset, its progress, the presence or absence of sinuses, the painful limitation of the movements of the joint, the existence of adduction of the thigh rather than abduction, together with flexion, will serve to distinguish between them. If doubt, however, should exist, an examination under an anæsthetic will render the case clear. Occasionally paralytic dislocation of the hip is found, and if the child has not walked the difficulties are great, and there can be no doubt that many so-called congenital displacements are really paralytic. Confusion is the more likely to arise because the caput femoris is in paralytic dislocation very mobile, and the great trochanter is much displaced, while moderate traction brings the head back into its position. But the muscles should be very carefully tested for signs of degeneration, secondary to anterior poliomyelitis, and by careful and skilful

movements the head of the femur can be completely replaced in the acetabulum, but a congenital displacement cannot. A difficulty may arise in some cases of traumatic dislocation, but although the head of the bone is full and rounded and in a new position, yet the rigidity of the limb, the history of the case and, if recent, the bruising of the parts will render the diagnosis sufficiently clear.

TREATMENT.—The ideal treatment is complete removal of the deformity and the waddling gait, and the substitution of a complete joint for the loose and telescopic one. But it may be well to enumerate the difficulties which have to be overcome before such desired end can be obtained. These are : the ill-developed or shallow acetabulum, its irregular shape, its diminutive size ; the small mis-shaped or partly absent head of the femur, the version of the neck, the altered condition of the capsular ligament which may be either very much thickened or thinned, or even hour-glass in shape, or folded between the head of the femur and the surface of the os innominatum ; and finally, the contraction of the adductor muscles together with the altered direction of the ilio-psoas.

The methods which have been employed are many, but of them all, three, at least, deserve serious notice. These are : (1,) Prolonged recumbency with extension ; (2,) Reduction by the open method, either of Hoffa or Lorenz ; and (3,) Forcible extension and reduction by manipulation, according to the method advocated by Paci and recently modified by Lorenz.

The oldest form of treatment is that of complete extension in the recumbent position. This method found a strong supporter in William Adams, who published several cases. But in none of these did it seem that a complete cure was effected, and indeed the classical case of Buckminster Brown, which was averred to have been cured, had nine years after suffered a relapse. This incompleteness of result seriously detracts from the value of this method ; and it has indeed many other disadvantages, notably, the long duration of treatment, its strongest advocate saying that it is necessary to keep the patient recumbent for at least two years on a special couch which is fitted with an extension-apparatus. Even after that it is essential that the patient's feet should not be placed directly on the ground, but that he should walk about on crutches with a special extension apparatus applied to the limb. When we consider the duration of this line of treatment, its costliness, its possible ill-effect on the patient's general health, and its uncertain result, we feel that on these points alone it is to be condemned. But, it may be enquired, in what way was cure to be effected by this treatment? We have asked Mr. William Adams about this point, and he

thinks that a favourable result may be brought about by bringing the head of the femur into as nearly its normal position as possible, and then will follow shortening of the capsule, while the head of the bone makes for itself a suitable socket either in or near the old acetabulum, or a new socket will be made which is strengthened by consolidation of the fibrous capsule at the upper and back part of the acetabulum. Such results *may* follow, but we are not at all satisfied that they will, inasmuch as one essential point has been disregarded, namely, the head of the femur is not by this method sufficiently forced against the outer surface of the os innominatum, and this alone must be the key-note of success.

Schede, however, has for some years past treated cases of congenital displacements, that is, those under two years of age, in whom no secondary changes have been caused by walking, by simple traction, slight abduction, and moderate *lateral pressure* on the trochanter by which the head of the bone is retained in the acetabulum. He holds that in many cases the condition is by no means so incurable as it is supposed to be, and it can not only be greatly improved but brought to a complete cure. But after the child has commenced to walk the prognosis is less favourable. By the end of the second year, and certainly in the third, the changes in the joint have become so marked that extension alone no longer suffices to reduce the deformity. In such cases, Schede employs continuous extension by means of weights for a few weeks or months, and so restores the position, that with slight abduction and pressure over the great trochanter the head of the bone may be made to go back into its place and remain so firmly fixed that pressure upon the sole of the foot no longer causes it to ride out. Schede's apparatus is essentially an outside steel-support from the pelvis with an abduction-screw, by turning which pressure may be made on the trochanter. This is used during the day, and extension of 4 to 5 lbs. is put on at night until a cure is effected. Schede reported forty-three cases treated by his method. Of these, four were entirely and absolutely cured, ten almost, fifteen greatly improved, ten but slightly improved, and four lost sight of.

Personally, we have tried the recumbency-with-extension method in four cases, and with a very considerable measure of success. The treatment has extended over three to four years, and in one of these cases the boy has now walked for eighteen months without any recurrence. It is evident that treatment on these lines is tedious to a degree, and difficult to carry out, and some parents and patients will naturally strongly object to it. In those cases in which the parents object to the child being kept in confinement for so long,

the following method of treatment, which is a compromise, may be carried out, viz.: For a patient to wear an extension instrument by day, and to have a weight applied at night. The extension instrument is composed of a fixed pelvic band with extending screws on the inside and outside uprights, by means of which downward traction is brought to bear upon the shortened limb. The cork sole on the sound limb prevents the foot on the deformed side coming in contact with the ground.

With the idea of exciting a firm fibrous or bony growth at the spot where the head of the femur rests in recumbency, Lannelongue has injected a few minims of a 10 per cent. solution of **Chloride of Zinc**. It is best not to inject more than 2 minims at a time, and to leave an interval of two or three weeks between each injection. In one of the cases in which he carried out this method a good result was obtained, and he reported it as a cure. At any rate the practical importance to be deduced from this proceeding is that in order to obtain a cure some inflammation must be excited, and this is just what the treatment by rest and extension in the recumbent position fails to effect, and hence it cannot hold out certain hope of a satisfactory result. Indeed, it seems that in order to obtain a cure we must just hit that happy degree of mild inflammation resulting in some fibrous bond between the bones, and not that of inflammation sufficient to produce absolute ankylosis. It would seem that if we could obtain the same result as that which is found after some cases of arthrodesis of the ankle, in which there is fibrous ankylosis sufficiently extensible to allow the ankle good but firm movement, the ideal result would be obtained.

Treatment by the method of Open Operation.—This was first advocated by Hoffa, and his method has now been entirely discarded for several reasons, not the least important of which is its extreme severity. It is also founded upon false premises. He maintained that all the muscles round the joint were contracted, whereas Lorenz has definitely shown that it is only the adductor muscles, and in the operation by the latter surgeon these alone are divided subcutaneously. It seems that Lorenz by his modified method has operated upon two hundred cases, but few of these appear to us upon examination to have been unqualified successes. In his recently published book he gives detailed results of one hundred cases. In the early ones he met with many difficulties, and some disasters: thus, two died from sepsis; one bilateral case was followed by ankylosis on both sides; one operation was left unfinished because of the difficulties attending it; in two the deformity recurred, and in one the reduction was difficult and prolonged, and three were complete failures because the after-treatment could not be carried out.

The remainder of the one hundred cases are claimed as unqualified successes, with four exceptions in which limited movement and partial ankylosis followed. But it is to be noticed that however perfect the anatomical results as to the reposition of the head may be, the functional result is far from being so. The limping, waddling gait still remains, and the shortening of the limb necessarily persists. Ankylosis, especially if double, although limited, must be regarded as a disaster. It is also remarkable that when surgeons of great operative skill and experience in other countries have endeavoured to follow in Lorenz's footsteps, they have met with nothing like the success. But a most important point is that Lorenz has abandoned this method and now resorts to forcible reduction whenever possible, and we cannot think that the ready abandonment of the open method by its great advocate speaks well for it.

We have had personal knowledge of the operation, and it is one of considerable difficulty and severity. In a case upon which we operated, we found the head of the femur mis-shapen and retroverted, the acetabulum entirely wanting, and in its place a bony crest, and the capsule large, loose and lax. It was not possible to deepen the os innominatum to form a new acetabulum, but we gouged away a considerable quantity of bone. Subsequently, that is, within about five days of the operation, the child developed signs of scarlet fever, taking the contagion from a patient who had just developed it on the opposite side of the ward. The whole wound broke down and finally healed by granulation. A cure followed, but this we attribute, not directly to the operation but rather to a sufficient degree of inflammation at the site of the new joint due to the suppuration following the attack of scarlet fever. In this operation we attempted to perform a modified arthrodesis of the joint, gouging away carefully a portion of the femur, and so obtained a fibrous ankylosis. In fact it seems to us that fibrous ankylosis and not a new joint should be the object of any open operative procedure.

Arbuthnot Lane has suggested the following modification: An incision is made backwards from the anterior-inferior spinous process along the upper limit of the femur. The structures superficial to the capsular ligament are cut through, and the front of the ilio-femoral ligament freely exposed. This is then divided at its attachment to the innominate bone, being left as a strong plane in connection with the femur. The ligamentum teres is then cut away. The caput femoris is then brought forwards to the same horizontal plane as the anterior-inferior spine, and its upper end is shaped into a blunt cone. The proximal limit of the anterior portion of the capsule is sewn firmly



Fig. H.—Extension, or first stage in the Paci-Lorenz method of reduction (after G. R. Elliott).



Fig. I.—Reposition, or second stage. Head of bone is being wedged into the remains of the acetabulum (after G. R. Elliott).

to the fibrous tissue about the anterior-inferior spine and to the straight head of the rectus femoris at its origin. After the head of the femur has been placed in its new position the wound is closed and the thigh fixed with a suitable apparatus at an angle with the foot of about 50 degrees or more from the vertical. Systematic movements are commenced in the acquired joint, and these soon become very free. The most important point Lane claims for his modification is that the new articulation lies in front of the transverse axis around which the pelvis rotates, namely, a line passing through the acetabular cavities. The curve of the lumbar region being thereby obliterated, the shortening that exists can be compensated without exaggerating the deformity. In the discussion which followed the exhibition at the Clinical Society in 1895 of two cases treated in this way, Bowlby remarked that he thought that one child walked very much in the same manner as if the dorsal dislocation were unreduced on one side, while in the other case the hip appeared to be nearly ankylosed, and there was much eversion. Wallace was of opinion that what improvement there was seemed to be due to the use of a high boot.

Forcible reduction by manipulation, according to the method modified by Lorenz on that practised by Paci.—The manœuvres of Paci are as follows: The patient is placed recumbent and the surgeon flexes the leg fully on the thigh and the thigh on the pelvis, thus carrying the head of the femur downwards. The thigh is now abducted slightly, and the limb is strongly rotated outwards and then extended fully. If the displacement be anterior, the limb should be abducted and rotated inwards. Paci claims that by the last-named movement the head is brought as near to the acetabulum as possible, but it is well to note that he does not claim that it is put into or on the acetabulum. As a rule an anæsthetic should be given for this proceeding. Afterwards the limb is put up in silica or plaster of Paris bandages for a month, followed by continuous extension for three months. Then walking may be commenced on crutches.

Acting no doubt on the hints conveyed by Paci's procedure, Lorenz, after much thought and careful observation of the cases operated upon, together with the anatomical knowledge gained thereby, resolved to alter his treatment in 1895, and since then has reduced a very considerable number of cases, some eighty-three or more with success.

We will now turn to the details of Lorenz's most recent procedure, and for a clear description of the same, together with the accompanying illustrations (*Plate VIII, Figs. H, I, and Plate IX*), we are indebted to the courtesy of Dr. G. R. Elliott, of New York, an eye-witness of Lorenz's procedure. The first step of

the reduction consists in bringing the head of the dislocated thigh down to the level of the acetabulum. In order to do this the patient is anæsthetized until the muscles are completely relaxed. It may be done in some cases in young children by manual extension, but more frequently it is necessary for a band to be passed around the perineum, protected by padding, and a soft band put upon the ankle. By attaching the latter band to a screw extension-apparatus very considerable traction is made upon the thigh. The operator grasps the muscles of the thigh with one hand, while the other is kept upon the dislocated joint. As the extension gradually goes on the operator manipulates the thigh muscles (*Plate VIII, Fig. H*), increasing their tension by intermittent pressure against the femur underneath, while with the hand upon the joint he appreciates the descent of the trochanter. "The extension is stopped at the moment when the upper margin of the trochanter is at or just below the Nélaton line. While the extension goes on, the pelvis on the affected side is drawn down, causing some abduction of the thigh. This abduction is desirable in order to afford increased extension of the adductor muscles abnormally contracted. Fracture is to be avoided by care in having the extension uniformly exerted." We, however, find that in place of using considerable force in this way, it is decidedly better to subcutaneously divide the contracted adductor muscles until the trochanter can be brought down to the level of Nélaton's line by manual extension.

"The second step in this reduction by Lorenz's method consists in the wedging of the reduced head of the thigh-bone into the acetabulum. This is styled reposition, and the chief obstruction to this reposition is the anterior wall of the capsular ligament (*Plate VIII, Fig. I*). The capsular ligament lies between the surfaces of the head and the acetabulum and hugs the latter closely, and so prevents the head being drawn down to its proper position." In order to overcome this obstruction "the operator standing on a stool seizes the thigh flexed at right angles to the trunk with one hand, and with the other grasping the head of the femur he by a system of extension, combined with rotation and gradually increasing abduction, opens the way into the dormant-lying acetabular pocket. When the abduction, which must be gradually exerted, has reached a considerable degree, the head of the femur still manipulated by one hand is felt to leap over the posterior edge of the acetabulum, and the surgeon knows at once that reposition has taken place. If, however, the abduction be lessened, re-dislocation occurs, and in order to keep the head in its proper position it is necessary to maintain the angle of abduction not far from 90 degrees." It may be difficult to tell when the head of the femur is fully replaced, but a guide

PLATE IX.



Final stage. Fixation of limb in the fully abducted position (after G. R. Elliott).

is afforded by the following points : The head can be felt anteriorly midway between the symphysis and the anterior superior spine of the ilium, and the hollow space so characteristic of the displaced head is now obliterated. Movements in the second step are seen in *Plate VIII, Fig. I.*

The third step in the operation has for its object the formation of an acetabulum. Only a small part of this, however, can be performed at the time of operation ; the greater part of it results from the after-treatment. Although the acetabulum may be moulded by the operator and considerable patience and strength be exercised, yet the true change only occurs when the patient with a properly fixed joint is allowed to walk about. In order to retain the head of the bone in contact with the acetabulum, the thigh is fixed at about an angle of 90 degrees of abduction, and in children between the ages of three and four at a somewhat lesser angle. Fixation is made with a plaster of Paris bandage carefully applied about the pelvis, and extending to the knee-joint of the affected side (see *Plate IX*). A most important point in this modified method of Lorenz is that the patient should be allowed to bear his weight upon the affected side as soon as possible, and by this means drive the head of the femur, so to speak, into the rudimentary acetabulum. After two or three days the patients are encouraged to walk, and in doing so are advised to have two or three inches added to the sole of the foot on the affected side, and to seek the aid of a crutch for the first few days. Later on this can be dispensed with. Each step he now takes tends to drive the head of the bone deeper and deeper into the rudimentary acetabulum, and it is said that growth is re-awakened and the parts become more active, and a new joint is gradually built up. It may be remarked that children soon learn to walk in this somewhat uncomfortable position. The plaster of Paris bandage is left on for three months and then removed. Should the joint be found to be firm and the reposition good, the patient is allowed to go about with the sole of the sound foot raised from two to four inches so as to keep up a tendency to slight abduction in the previously dislocated member. Massage and rubbing are now advised. Generally the patient requires a second fixation period of three months, and here the abduction may be remarkably reduced, say to an angle of 45 degrees, and the sole of the healthy foot now slightly raised. In double congenital dislocation it is advisable to operate upon one leg at a time, and when one joint has been rendered stable and firm the second operation is performed. Lorenz states that the operation is limited to young children as a rule, not exceeding seven years, but it answers more successfully in those under four

It will be well briefly to analyze the two procedures of Paci and of Lorenz. Paci himself claims that he makes a nearthrosis and does not pretend to put the head of the bone in the rudimentary acetabulum. Then in his manœuvres Paci further allows that if abduction takes place beyond a few degrees the head of the femur starts out of its position. It is true that the head does start out if the reposition is only about 15 or 20 degrees as advocated by Paci, but if abduction is 90 degrees then the head of the femur remains in its new position. This is one of the features of Lorenz's operation, the extreme degree of abduction in which the bone is placed. In Lorenz's modification no attempt is made to obtain a nearthrosis. His object is to put the head of the bone either in or on to the incomplete acetabulum and allow the weight of the body to force the head into the acetabulum, and by the pressure so made a new growth is excited with the result that the rudimentary acetabulum is developed until it is of sufficient size to retain the head of the femur. Up to September 25, 1896, Lorenz had operated upon about eighty-three cases with success. There can be no doubt that this modified operation of Lorenz, namely, reduction by manipulation and placing the thigh in the position of extreme abduction is a distinct advance upon other methods, inasmuch as it is safe, and it is often effectual in curing the patient.

To sum up the treatment: (1,) Of all the methods it seems that reduction by manipulation in the way practised by Lorenz offers the greatest chance of success, and indeed in children under seven years of age, if properly carried out, is uniformly successful. But without doubt in children over that age it should be in all cases practised; (2,) The older method of complete recumbency, extension and abduction for a period of many months, if not years, is not to be advocated, except in the case of children under two years of age, and then it may effect a cure. The chief objections to it are its duration, tedium, and the possibility of disappointment owing to recurrence of the deformity at a later period; (3,) Operative measures, meaning by those open operative measures, cannot be necessary if the displacement is recognized early. And should operative measures be undertaken then the following points must be clearly put before the patient or his friends. The number of perfect cures by operation is small. Cases, however, are frequently much improved, but lameness persists to some degree, and the limb remains more or less shortened. Lordosis and waddling gait will also persist, the formation of a complete joint is very rare, and, lastly, the danger of an operation is not small and the risks of ankylosis are considerable; but, if reduction by manipulation, extension and abduction fail, the propriety of an operation should be con-

sidered ; although against this point we have Schede's statement that out of a total of ninety-nine cases he had in ninety-eight successfully reduced the dislocation by external manipulation. The age of the patients ranged from that of infants up to fifteen years.

PROGNOSIS.—It may be said that the prognosis becomes less and less favourable the later the affection is recognized and the more the patient has been allowed to walk about without treatment. There can be no doubt that in cases under two years of age the deformity can be easily overcome before perverted growth has induced alteration in the shape of the head of the femur, in the direction of the muscles and in the pelvis itself. Cases under four are by no means unfavourable to treatment, and even up to seven years of age. But after that the difficulties of treatment are much increased by the changes in the capsule, the head of the femur, by the filling up of the acetabulum, and by the contraction of muscles ; yet in all these an effort should be made to reduce the deformity, and the non-operative method of Lorenz is undoubtedly the best. Should this fail for any reason, prolonged extension with injection of chloride of zinc, as recommended by Lannelongue, may be efficacious in producing such an amount of inflammation as to consolidate the false joint. These means failing, Lorenz's open operative measures may be entertained with the reservations previously expressed. If we have to deal with an old or much deformed case sub-trochanteric osteotomy, as suggested by Kirmisson, seems the right course.

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HYDATID CYSTS. (See also “Abdominal Surgery.”)

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The greatest change which has taken place in the surgical treatment of hydatids during the last twelve months is perhaps the somewhat general adoption by Australian surgeons of Bond’s method. Bond’s plan of treating hydatids by removing the cyst and dropping back the adventitious capsule without drainage finds its chief utility in intra-abdominal hydatid tumours. These often exist in countless numbers, and the old plan of incising and draining each separate cyst very rarely led to a complete cure. Now, however, the abdomen can be opened and one cyst after another stabbed. All *débris* of the mother cyst and all daughter cysts (abdominal hydatids are frequently packed with daughter cysts) must be turned out and the fibrous capsule—no matter how large so long as it is empty of all hydatid membrane—may be dropped back into the peritoneum and thought no more of. In this way I have lately stabbed between forty and fifty cysts in the abdomen of a man who had the largest protrusion of his abdomen due to hydatids which I have ever seen. Many of these cysts were deep down in the pelvis, as large as an adult head and tightly packed with thousands of daughter cysts. I was very careful thoroughly to rid the fibrous capsule of all hydatids. I was obliged to leave many cysts unstabbed in the abdomen, because the man became collapsed and looked as though he would die on the table. I closed the abdomen without any drain, and the man made an uneventful recovery with the circumference of his abdomen reduced from eighty-six to forty inches. The remaining cysts can be dealt with in the same way at some future time. If any of these large cysts had been drained in the old way it

would have taken weeks before the drainage tubes could have been taken out, and then only one, or at the most, two or three, could have been dealt with at one time.

After operation by Bond's method, on the other hand, if the abdominal hydatids are not too numerous to stab at one sitting, the patient's abdomen can be closed without drainage and a complete cure effected in a few days. In cases of lung hydatid it still seems desirable to continue the old method of free incision and drainage.

HYDROCELE.

Priestley Leech, M.D., F.R.C.S.

Mr. F. A. Southam¹ gives a list of twenty-two cases of radical cure of hydrocele of the tunica vaginalis.

The operation is carried out as follows: The cavity of the tunica vaginalis is laid open by a two- or three-inch incision, made from the front through the tissues of the scrotum. The tunica is then dissected on either side up to the point where it is reflected upon the testes and lower part of the cord, and removed with a pair of scissors close to its reflection upon the cord and testes. All bleeding is stopped, the wound closed, and no drainage has been employed in the recent cases. If pressure is kept up by means of wool pads and the scrotum is raised healing soon takes place, and the patient is usually able to get about in ten days or a fortnight wearing a suspensory bandage.

The chief conditions calling for this operation are: (1,) When the patient is anxious for a radical cure but does not wish to run the risk of an unsuccessful attempt by injection; (2,) In old hydroceles with thickened and rigid walls; (3,) When injection has been tried and failed; (4,) When suppuration has occurred after tapping; (5,) When hæmatocele follows after tapping; (6,) When an hydrocele is associated with an inguinal hernia upon which it is desirable to perform the radical cure; (7,) In two rare conditions (*a*.) Where the testis is adherent to the anterior wall of the scrotum, forming a prominence, the result of previous tapplings; (*b*.) A multilocular hydrocele; (8,) In cases of encysted hydrocele the entire sac can be excised and the whole of the secreting surface is therefore removed.

REFERENCE.—¹ "Lancet," 1, 1897, p. 802.

HYPERIDROSIS.

T. Colcott Fox, M.B.

Krahn¹ recommends an old, harmless, cheap remedy forgotten by the present generation. He gives 20 drops of **Tincture of Salvia** in the morning, and from 20 to 40 drops in the evening. It must be taken continuously for several weeks to obtain a permanent cure.

Stockmann² calls attention to the success met with by Fürbringer.

and others in checking sweating by the administration of **Camphoric Acid**, and refers to successful cases of his own. It is said to act more powerfully though less quickly than atropin, picrotoxin, or agaricin. Its value is not confined to tuberculous cases. He recommends that 30 grains be given in one dose at night two or three hours before the sweating begins, or in two doses at short intervals—in powder or in capsules or cachets.

Arloing's³ observations on the sweat and its toxicity are of great interest.

Concerning the treatment of *hyperidrosis of the hands and feet*, the "New York Med. Journ., (May 8, 1897,) quotes an article by Noebe and another by Adler. Noebe treats of four methods: (1,) The wearing of such foot-gear as will favour evaporation of the perspiration, such as cloth shoes; (2,) The use of **Chemical Desiccants**: (a,) alcohol with tannin, alum, and naphthol; (b,) salicylated talc (a mixture of salicylic acid, alum, and talc), salicylic acid with starch and tannin, powdered tartaric acid, and sulphur; (c,) a solution of chromic acid of the strength of from 5 to 10 per cent.; (d,) a solution of iron chloride in glycerin. The so-called miliary sweat powder, he says, works much better if it contains as much as 50 per cent. of salicylic acid, with the addition of tannin, alum, etc.; (3,) The production of complete desquamation of the horny layer of the epidermis by maceration with **Diachylon Plaster**; (4,) The employment of an anthidrotic solution containing 25 per cent. of **Hydrochloric Acid**. The feet may be immersed for ten minutes in undiluted commercial hydrochloric acid twice a week for from five to eight weeks, and then at longer intervals. After each application the feet, especially the spaces between the toes, should be washed with warm soap and water, and, if the acid has caused pain, a salve should be applied. With patients who are very sensitive, a 25 per cent. solution of the acid may be used at first, and the solution be gradually increased in strength until finally the crude acid is used undiluted. The "New York Med. Journ." recommends great caution as to the strength of the solution employed; it would certainly be risky, it thinks, to begin with the use of the undiluted acid known in America as crude hydrochloric acid. Equally good results are obtained with a 10 per cent. solution of **Silver Nitrate** painted on the sole of the foot and on the interdigital spaces every morning until the horny layer is shed. This procedure, Noebe says, gives better results than the employment of chromic acid, and is free from the dangers of that substance.

Adler distinguishes two classes of remedies—those that act as absorbents and those that diminish secretion, such as powdered

tartaric acid. In the first class, the dusting-powders are chief; but they have to be used every day, and so they soon get to be unpleasant. Moreover, they become caked with the secretion and make walking painful. Among the remedies of the second class, the author has found none better than the **Formalin** solution of the shops. When it has been used for two or three days, a sort of scurf forms and the secretion suddenly subsides. The effect lasts for two or three weeks, according to the severity of the trouble and the thoroughness of the applications. Any fissures that may exist must first be healed, otherwise the formalin will cause severe burning. Care must be taken also that the fumes are not inhaled, as they are highly irritating. When the hands are affected, only weak solutions should be applied to them.

According to Frey, all that is necessary successfully to combat bromidrosis of the feet, is to wash them once or twice daily with a 2 per cent. solution of formalin. (The "Presse médicale" gives a 1 per cent. solution.) Especial attention should be paid to the plantar surface and to the interdigital spaces. The foetid odour usually disappears after the end of a few days. It is well to rinse the shoes and stockings also with the same solution, particularly the inner side of the sole, which should be wiped dry after each lavage. By these simple procedures, Frey has obtained excellent results in cases which had been unsuccessfully treated with salicylic acid powders and by chromic acid applications.

Heusner employs a solution of **Balsam of Peru** (1 per cent.), formic acid (5 per cent.), and **Chloral Hydrate** (5 per cent.), in alcohol for local and general hyperidrosis. The general perspiration in phthisis and other diseases is improved by application only of a weak solution of **Formic Acid** (5 per cent.) and Peruvian balsam (1 per cent.). For sweating of the feet, arms and axilla, chloral hydrate (5 per cent.) must be added to the formic acid and Peruvian balsam.

The following formula⁴ is recommended for hyperidrosis of the feet :—

R̄ Alumna	Amyli	4 gme.
Aristol	āā 1 gme.	

Use as a dusting powder.

REFERENCES.—¹"Therap. Monats.," March, 1897; ²"Edin. Med. Journ.," 1896; ³"Lyon méd.," Dec. 13, 1896; ⁴"Méd. mod."

HYPERTRICHOSIS.

T. Colcott Fox, M.B.

We quote the following convenient epitome from the "Brit. Med. Journ." :—

Leopold Freund¹ has been induced by the cases of alopecia resulting from the use of the Roentgen rays, to attempt the treatment

of hairy nævus by means of the discharge through a vacuum tube. The patient was a girl, aged five, suffering from a hairy and pigmented nævus reaching from the nape of the neck, down almost to the fold of the nates and extending over the whole back, the sides of the thorax, the shoulders, and the upper half of the right arm. There were a large number of smaller nævi in various parts of the body. Treatment consisted in the use of the rays from a vacuum tube through which the current from a Rühmkorf's coil with a 10-inch spark was passed. The child's back was exposed to the rays for two hours every morning at a distance of four inches from the tube, the kathode rays being employed. For ten days no effect was produced, but on the eleventh a few hairs began to fall out in bundles, and this continued to an increasing extent for eight days, when a slight dermatitis appeared, which soon yielded under the use of ichthyol. By this time the neck and interscapular space had become quite bald. It was found that anodal rays and electrical waves alone did not produce depilation. It was noticed that the thin, fine, normal hairs were always more readily affected than the strong, short hairs of the nævus; further, that the action of the rays was slow in commencing, but when once established appeared to be cumulative. The actual cause of the falling out of the hairs appears to have been a slight inflammatory change, followed by atrophy of the follicles. No attempt at regeneration had taken place within six weeks, but this was of course too short a time for a final conclusion.

Brayton² says **Boettger's Calcium Sulphydrate Paste** is a perfect depilatory. Calcium sulphydrate is made by passing sulphuretted hydrogen through a thick cream of well slaked lime until the latter will absorb no more of the gas.

REFERENCES.—¹"Wien. med. Woch.," March 6, 1897; ²"Med. and Surg. Reporter," June 13, 1896.

HYSTERIA.

Græme M. Hammond, M.D., New York.

Strozevski,¹ from an examination of over fifty cases of hysteria, has arrived at the conclusion that in this condition there is always an absence, or, at least, a marked diminution, of the peculiar sensation caused by very lightly tickling (as with a small piece of paper or a hair) certain sensitive parts of the body, such as the external auditory meatus and the mucous membrane of the nostrils, the lower eyelids and the skin of the forehead. Less excitable parts are the axillæ, the skin over and under the knee, and the sole of the foot. Ordinary sensation in the parts is normal. The symptom persists even after the cure of any striking hysterical manifestation which may have been present.

Karplus² calls attention to the absence of the pupil reflex in attacks of hysteria. The observations, if confirmed, will make it necessary to use with reserve the absent pupil reflex as a negative pathognomonic sign in suspected hysteria.

For hysterical mutism, Fazio³ recommends **Etherization** up to the stage of preliminary excitation.

REFERENCES.—¹"Treatment," March 11, 1897; ²"Amer. Journ. Med. Sci.," April, 1897; ³"Amer. Med. Surg. Bull.," Nov. 10, 1897.

ICHTHYOSIS.

T. Colcott Fox, M.B.

David Walsh¹ administered in four cases tabloids made by Burroughs and Wellcome, containing 5 grains of the dried **Thyroid Gland** with $\frac{1}{10}$ of a grain of pilocarpin nitrate. The amount of thyroid gland given must depend on the age of the patient and the manner in which it is tolerated. The cases improved remarkably. The reporter's experience goes to confirm these observations of Walsh and others. It is not yet known whether the severest type of ichthyosis is equally benefited, or whether the amelioration can be lasting.

REFERENCE.—¹"Med. Press and Circ.," Dec. 22, 1896.

IDIOCY FROM HYDROCEPHALUS. (See "Insanity.")

IMPETIGO.

T. Colcott Fox, M.B.

Brocher¹ studied eighteen cases of impetigo and eighteen times found a streptococcus (alone eleven times) presenting all the characters, morphological and cultural, of streptococcus pyogenes. The chains were short and sparse, often monococci or diplococci, or even masses simulating staphylococcus. Mice inoculated succumbed in a few days. He considers the affection of external origin, and recommends the bacteriological examination for diagnostic purposes.

Fyffe,² of Clifton, discusses the impetigo met with amongst football players in schools. To prevent it the boys' clothing, especially the jerseys worn in the matches, must be boiled, or disinfected with hot air, or still better steam, and the players must be carefully inspected in order to exclude any boy who presents a suspicious patch on his face.

Some remarkable phases of widespread impetigo have been reported of late. Allen³ records a case of *impetigo contagiosa universalis* in which excentrically spreading bullæ predominated.

Schamberg⁴ describes and figures an *I. contagiosa annulata et serpiginosa* of the face, neck, axillæ, pubic regions, arms and back.

Radcliffe-Crocker⁵ also figures a widespread *I. c. gyrata*. A remarkable case has also been lately described in which vegetations grew from some of the patches, as may happen in some rare forms of pemphigus, impetigo herpetiformis and dermatitis herpetiformis.

Bolognini⁶ gives the details of a limited outbreak of varicella, in which nearly all the cases (twelve out of fifteen) terminated by a rare complication. When the vesicles were about to dry up, they rapidly increased in size and formed bullæ containing numerous staphylococci and a few streptococci. In all the cases there was albuminuria, and one terminated fatally with a kidney abscess. This staphylo-streptococcia has been previously described as a complication of varicella. In this connection we may mention an interesting paper by P. H. Pye-Smith⁷ on *Bullous Varicella*. In cases like those here recorded it is often exceedingly difficult to establish whether we have to do with a true bullous varicella, or a varicella complicated by staphylococcus or streptococcus infection, or a true generalized impetigo contagiosa.

In this section we may also call attention to a remarkable case recorded by Unna⁸ of a generalized eruption, at first papulo-vesicular, and later just like variola with umbilications, occurring in a one-year old infant after rupeola, and terminating fatally on the fifth day. An autopsy disclosed the lesions of a generalized infection. The cocci at first formed plugs in the papillary vessels, later wandered out and invaded the pustule, and finally entirely filled the latter. Such a case leads us on again to consider the papulo-pustular eruptions occurring in the course of pyæmia (dermatitis pyæmica)⁹ and septic infections,¹⁰ and to discuss the cause of the eruption known as impetigo herpetiformis.¹¹

REFERENCES.—¹"Thèse de Doctor en Méd.," Geneva, 1896; ²"Bristol Med. Journ.,"; ³"Annals of Gynæcol. and Pediat.," Oct. 1896; ⁴"Journ. Cut. and Gen.-Urin. Dis.," May, 1896; ⁵"Clin. Soc. Trans.," vol. xxix, 1896; ⁶Abst. "Brit. Journ. Derm.," 1897; ⁷reported "Brit. Journ. Derm.," April, 1897; ⁸"St. Louis Med. and Surg. Journ.," p. 272, Nov. 1895; ⁹"Finger," "Wien. klin. Woch.," p. 25, 1896; ¹⁰Meyer, "Arch. f. klin. Chir.," Band 2, Heft 1, 1896; ¹¹Glacvete, "Arch. f. Gyn.," Band 211, Heft 1, p. 18.

INGROWING TOE-NAIL.

Priestley Leech, M.D., F.R.C.S.

Mr. McAdam Eccles¹ says that a lasting and permanent cure may be confidently expected by the following treatment: (1,) The pressure which has been acting so injudiciously must be removed; the patient must be carefully measured for boots, the uppers of which should be of a less unyielding character than usual. During the actual treatment the patient had better wear a canvas shoe; (2,) The part should be rendered aseptic; wash the whole foot with warm soap and water and then soak in a hot solution of 1 in 4,000 bichloride of mercury solution for fifteen minutes. This process should be repeated each day for about four days; (3,) A small piece of antiseptic gauze is to be gradually and very gently (after the washing is over) insinuated between the nail and the overlying soft tissues. If not done gently this is very painful.

The gauze will be retained in position but it should be removed before the soaking on the following day. After this the tissues are considerably separated from the nail and then the nail can be trimmed where it is in contact with the soft tissues. After soaking the gauze is to be re-inserted as before. Within a week the parts have nearly assumed their normal appearance and the patient has been able to get about. The strip of gauze should be continued for a few weeks.

A modification of the above method I have found useful, viz., in place of the soaking to use a compress of gauze soaked in carbolic lotion or perchloride and india-rubber tissue over it; after two days' treatment by compress the gauze may be used dry as above and the nail trimmed.

REFERENCE.—¹ "St. Barth. Hosp. Gazette," May, 1897.

INSANITY. (See also "Epilepsy.") *James Shaw, M.D.*

Etiology.—Vassitch,¹ who as the chief physician of the Belgrade Asylum, and a member of a small State in which, as he says, the people almost all know each other, has had exceptional opportunities of studying *Family Degeneracy*, states that this cause furnishes a good half of the total number of insane in Servia. Among the insane, the feeble-minded, and the epileptic, are to be found the last descendants of celebrated and quondam rich and powerful families; whilst other representatives of the great families of the early part of this century bear on them and in them manifest signs of degeneracy. These individuals are incapable of doing any useful work. They are generally beardless, stammerers, sufferers from facial tic, gamblers, debauchees, vagabonds, ne'er-do-wells.

But the predisposition to insanity may be set up in early life by a number of other causes besides neuropathic heredity, as Toulouse² has pointed out. It may be engendered by trophic disturbances during foetal life, by the emotions or intoxication of the mother during gestation, by faulty training, etc. So that the problem of degeneracy is an extremely complex one. Meanwhile clinical facts tell us that the degenerative differ enormously from other types of mental alienation, and for that reason alone they deserve a place apart in our classifications.

Toulouse,³ while attributing the utmost importance to predisposition (hereditary, congenital, or acquired), deprecates any attempt to under-rate the effect of so-called "exciting causes." He believes that *direct* heredity is rare in mental diseases, and that its apparent effects may often be the result of imitation or contagion. What is inherited is not

a distinct disease, but a deterioration rendering the person abnormally susceptible to exciting causes.

Toulouse⁴ further points out that neuropathic families are observed to contain not only members who suffer from nervous and mental, but others who are affected with scrofulous and arthritic diseases. There is a good deal of evidence to show that it is especially in subjects of the arthritic diathesis that the various exciting causes most readily give rise to general paralysis. Joffroy, Toulouse, and Näcke believe that heredity plays a great part in the production of general paralysis. According to Joffroy there must be a distinct, frequently a hereditary, predisposition; and it is only in such a soil that syphilis, alcoholism over-work, etc., can engender the disease.

Marro,⁵ in a study of the psychosis peculiar to puberty, finds as predisposing cause direct heredity, especially on the maternal side; and this morbid heredity is for the most part represented by actual insanity. The degenerative nature of the psychosis reveals itself by the hereditary factor in the causation, as well as by the nervous temperament, oddness of character and conduct, etc., and sometimes by the scrofulous or rachitic constitution and cranio-facial degenerative signs.

Noyes⁶ states that the recent investigations of endemic cretinism are positive and convincing that heredity is one of the chief causes in producing the individual cretins. The infants do not seem to show symptoms of cretinism until they are weaned and drink the water; but only those whose parents have goîtres seem to become cretins. The people with goîtres are not cretins, but the race tends by a gradual deterioration to the development of cretinism in the next generation. The Swiss writers have long admitted a close connection between struma, cretinism, and deaf-mutism. The general cause of endemic deaf-mutism in Switzerland, and of congenital deaf-mutism there and elsewhere, is heredity. Noyes, in concluding his study of sporadic cretinism, insists, first, that the symptoms of cretinism are to be explained as the result of the myxœdematous process in the undeveloped tissues of the infant; and, second, that a scientific application of the principles of heredity by such methods as have been used in deaf-mutism, idiocy, and other nervous diseases, will demonstrate similar relations in cretinism. Even in difficult cases hereditary etiology may sometimes be proved if one carefully takes into consideration not only such general diseases of the parents as tuberculosis, malignant new growths, and various nervous diseases, but all stigmata and bodily and mental anomalies which may appear in the different members of the family in its various branches, if possible, in three generations.

P. M. Laffan,⁷ in a paper on endemic insanity, contributed to the British Medical Meeting in July, 1896, describes a district in Ireland, about four square miles in extent, containing sixty families constituting a population of three hundred. Each of thirty of these families has one or more members insane, idiotic, goïtrous, or neurotic—collectively twenty-nine insane, seven idiotic or weak-minded, four goïtrous, and many neurotic. Heredity and local alliances stand prominently forward in the etiology. But there are in addition some peculiarities about portions of the district which may have etiological significance. These peculiarities are that cattle fed exclusively on these lands lose their horns, horses their hoofs, whilst birds have very defective bills or none; and, more curious still, bread made from corn grown there causes the hair and nails to fall off those who eat it.

Savage⁸ considers heredity the most important predisposing cause of the insanity of pregnancy and the puerperium.

Turner,⁹ from a statistical study of one thousand and thirty-nine patients with hereditary predisposition to insanity admitted into the Essex Asylum during the past ten or eleven years, draws the conclusions that in acquired cases whichever parent is affected the evil influence is more marked in the female offspring than in the male; that, in congenital cases, in accordance with the Darwinian Law of Heredity, the mother is more liable to transmit her unstable nervous system to her daughters, the father to his sons; that, taking acquired and congenital cases together, while the insane father transmits his mental instability to a greater number of offspring than the insane mother, it is on the daughters that it mostly falls, and where the mother is insane the influence is still more marked in the direction of the daughters, therefore whichever parent is insane more daughters ultimately become insane than sons; that the number of insane mothers is very considerably greater than that of insane fathers; that, as regards reversional and collateral inheritance the stronger hereditary influence in both sexes comes through the maternal branch of the family, and the males have the larger number of brothers insane, the females the larger number of sisters.

Talbot¹⁰ holds that the causes (intemperance, constitutional diseases, and city life in the parents) which originate degenerative manifestations of the nervous system such as vicious tendencies, moral insanity, dipsomania, prostitution, idiocy, pubescent insanity, neuroses, deaf-mutism, etc., equally give rise to cranio-facial degenerative signs.

One of the most interesting etiological problems of the present day is the relationship between syphilis and general paralysis. In the eyes of some observers general paralysis is merely a symptom of syphilis.

Hirschl¹¹ examined the records of two hundred male cases treated at Krafft-Ebing's Clinic, one hundred and seventy-five of which furnished satisfactory information. Of these 56 per cent. surely, and 25 per cent. probably, had had syphilis; in 19 per cent. the evidences of preceding syphilis were not conclusive. In these latter there was an absence of any recognizable etiological factors, and the author adds that in his experience but 54 per cent. of the cases of late syphilis give a definite syphilitic history, which leads him to believe that general paralysis is always of specific origin.

Conrads¹² holds that hereditary syphilis is the cause of juvenile general paralysis. Alzheimer¹³ finds from the analysis of forty-one cases, his own and others, that syphilis plays a predominant, if not an exclusive, rôle in the etiology of juvenile paresis or developmental general paralysis. And as the usual causes, other than syphilis to which general paralysis is attributed, fail at this epoch of life, Alzheimer, rejecting the developmental changes, credited by Clouston and others, insists that the influence of syphilis is all the more marked, and holds that this form, for these reasons, throws a very important light on the etiology of the disease in general.

Fournier¹⁴ says that cerebral syphilis may give rise to general paralytic symptoms, and this clinical syndrome may be dubbed syphilitic pseudo-general paralysis, though it is not an entity. He also believes that syphilis may give rise to true general paralysis, and that very many general paralytics have suffered from syphilis. In twenty-seven sets of statistics the percentages range from 50 to 94. Another argument is that syphilographers who follow up their cases often see them become general paralytics. Fournier, whilst absolutely rejecting the view that general paralysis is, like a mucous plaque, merely symptomatic of syphilis, is convinced that many persons would not have become general paralytics if they had not first been syphilitics. He would place general paralysis amongst a group of affections and conditions which he calls parasyphilitic. To this group belong tabes, neurasthenia, hysteria, hydrocephalus, rickets, congenital malformations, arrests of development, etc. They may occur irrespectively of syphilis, and they are not influenced by specific treatment.

Bianchi¹⁵ does not ascribe to syphilis the etiological importance claimed for it by certain authors. In addition to various other considerations, anatomical and clinical, he submits the following, viz., that the great increase in the disease of late years is not explained by contemporaneous increase in the frequency of syphilis, and that the increase in the female sex cannot be due to the increase of syphilis in the latter, but is rather to be ex-

plained on the theory that women are partaking to a greater extent in the struggles of men.

Van Brero¹⁶ shows that out of two hundred and thirty natives and Chinese, the former greatly preponderating, who were admitted into his asylum at Buitenzorg in Java, there were only two general paralytics. Yet syphilis is not at all rare in the Dutch East Indies, and secondary and tertiary manifestations were observed by no means infrequently. In his account he states that Munot in Cuba, Niven at Bombay, Plaxton in Ceylon, Manning in New South Wales, Grieves in Berbice, Mendel and Sandwith at Cairo, Greenlees in South Africa, Sakaki at Tokio, Gillmore Ellis at Singapore, found few or no cases of general paralysis among the yellow, red, brown, and black races. Syphilis is anything but unknown among these races.

Between the years 1860 and 1889 there were four hundred and ninety-eight Arabs and Kabyles treated at the asylum of Aix in France, and of these, according to Meilhon's¹⁷ account, only thirteen were general paralytics. On the 31st December, 1889, there remained in the asylum eighty-three patients, seventy-three of whom were males, but not one general paralytic. Meilhon¹⁸ says that Vincent, in his clinical description of the diseases of the Kabyles (1862), states that out of four hundred and twenty-three natives admitted into the Dellys hospital in two years, one hundred and sixty-eight suffered from constitutional syphilis, mostly tertiary.

Finally, A. Voisin¹⁹ last year (1896), visited the part of the Sakiti hospital in Tunis, devoted to the treatment of insane Arabs, and found not a single general paralytic. Lewi, the physician in charge, had only seen one case of general paralysis in two years. The population of this division of the hospital is from seventy to ninety. Yet the number of syphilitic Arabs in Tunis is considerable, many of those detained in the Arab prison having contracted the disease "*par la voie anale*."

Now although the comparatively great immunity from general paralysis enjoyed by natives of warm climates, in the presence of widely diffused and well marked syphilis, is naturally much less conclusive than liability to the former disease in the total absence of the latter would be, yet it shows at least that for the genesis of general paralysis there is required some factor plus syphilis.

Much suggestive work has been done of late in relation to *reflex* and *auto-toxic* causes in insanity. Among the former may be mentioned (Hyslop²⁰) refractive and other disorders of the visual organs, aural and nasal diseases. Pelvic and dental diseases may belong to either or both categories.

Bosworth²¹ reports an interesting case in which the patient had suffered from melancholia and undergone much treatment without relief for ten years until an operation on the nose opened up the ethmoid cells, which had been occluded by a growth. The patient improved promptly, resumed business very shortly, and had, at the time of writing, remained well for four years.

Caroline S. Pease,²² gynæcologist to the St. Lawrence State Hospital, gives 65 per cent. as the proportion of female patients suffering from diseases of the genital organs in that asylum. Margaret A. Cleaves and Delia E. Howe, of Harrisburgh and Kankakee respectively, have found 30 per cent. ; whilst Alice May Farnham, of the Willard State Hospital, puts the figure as high as 80. Although C. S. Pease does not attribute to these genital affections an exclusive rôle in the etiology of the concomitant insanity, she thinks that their importance in mental pathogenesis has not hitherto been sufficiently recognized.

McLane Hamilton,²³ from a series of investigations based upon experiments on animals, and the special clinical observation of more than fifty cases of insanity, formulated the following conclusions : (1,) Urines rich in indican contained very little or no preformed sulphuric acid, and were toxic ; (2,) When the sulphate ratio was materially changed it probably indicated auto-toxis in connection with an increase in the amount of combined or ethereal sulphates ; (3,) Such indications were generally found with acute insanities in which rapidly developing symptoms occurred ; (4,) Fugacious and changing illusions and hallucinations, unsystematized delusion, confusion, and verbigeneration in connection with insomnia, pallor, intestinal indigestion, constipation, and rapid exhaustion, were due to auto-toxis ; (5,) Paranoiac states, or those in which concepts were the features, chronic stuporous conditions, and certain forms of dementia had little to do with the formation of intestinal products of putrefaction ; (6,) Various post-febrile, traumatic, alcoholic, or drug insanities, were those in which auto-toxis was most constant ; (7,) The variations in the excretion of combined sulphates kept pace with the changes in the progress of an established insanity, epileptiform attacks being directly connected with putrefactive processes. With regard to the production of the disturbances it would appear that the intestinal toxalbumins had more to do with this than the leucomaines, which, however, had an effect, though not a marked one. A study of his cases, he thought, unquestionably bore out the assumption that disturbances of the gastro-intestinal tract were attended by bacterial necrosis and the introduction into the general circulation of certain very

virulent toxic agents whose effects were expended mainly upon the nervous system.

Legrain and Guerin²⁴ are of opinion that the epileptic and apoplectic seizures of general paralysis are consequent on auto-intoxication.

De Boeck²⁵ says that little is as yet known regarding auto-intoxications, but the effects of myxœdema, uræmia, and fatigue, are admitted in this respect. It is mostly due to digestive derangements, accompanied by the formation of micro-organisms. Fermentative products are set free in the circulation, interfere with the nutrition of the neurons, and eventuate in melancholic or even maniacal conditions. Bacteriological investigations have proved the pathogeny of malarial infections and the possibility of neutralizing the power of living organisms in the human body, and we may, therefore, hope for good results in following out the teaching thus conveyed.

Pathology.—Bianchi and Piccinus²⁶ find that in certain cases of acute delirium the particular bacillus isolated and described by them in some cases of this disease is absent, although other micro-organisms (*streptococcus pyogenes*, *staphylococcus aureus*) are present and diminish in number with the decline of the disorder, finally disappearing. To the form in which the special bacillus is found they assign the name "Acute Delirium of Bacillary Origin." It is distinguished by the intensity of the symptoms, the rapidly occurring adynamia, the shortness of its course, and its fatal termination.

Clemente Cabitto²⁷ states that in five undoubted cases of acute delirium he found the bacteriological examination of the blood to give invariably negative results.

Carlo Martinotti²⁸ reports six cases in which there were clonic muscular contractions resembling those of electric chorea. Five of the cases were of acute delirium and resulted fatally. In three of them micro-organisms (*staphylococci* or *streptococci*) were present in the cerebral cortex: in the other two cases bacteriological investigations gave negative results.

Piccinus²⁹ found numerous bacilli in the brains of five general paralytics. Syphilis is said to have been clearly established in the history of three of the cases, although not in the remainder.

By means of modifications of the Golgi and Nissl methods Berkley,³⁰ by investigations carried out in the anatomical laboratory of the Johns Hopkins University on a number of rabbits, to each of which had been administered for periods varying from seven to seventeen months 5 to 8 cubic centimètres of absolute ethyl alcohol, found, making all allowances for artefacts, physiological variations, and inequalities in staining the following to be the principal lesions in the cerebral

cortex: Shrinkage of a vast majority of all the cortical cells, disappearance of the gemmulæ, certain swellings in the dendritic processes; and roughening of the stronger processes, as also, to some extent, of the cell body. Practically the same alterations were found in the Purkinje cells of the cerebellum as in the pyramidal cells of the cerebrum, though the changes were more striking from their relative intensity.

In the human subject the pathological lesions in chronic alcoholism are, he says, practically identical with those in the rabbit, varying only in degree, in some cases more intense, in others less so. Berkley does not consider these lesions of the neuron to be peculiar to alcoholism, but regards them as capable of being caused by any irritant drug or bacterial toxic product circulating in the blood, and acting for a considerable time on the living protoplasm of the nerve cell. He lays stress upon the fact that the alcohol which was supposed to be the least deleterious of the whole series, exerts a very definite and destructive effect upon the nerve cells. In concluding his paper the author gives his views regarding the correlation of the various symptoms, general sensory, special sensory, motor, and mental with the lesions, vascular, dendritic, sensory and motor cellular, and nuclear.

The Pathological Chemistry of the brain has not kept pace with its pathological histology, but Gutnikov³¹ has recently made, in the physiological laboratory of the Kharkow University, an important investigation with suggestive results. In fifteen fœtal brains the maximum percentage of phosphorus in the dried brain substance, grey and white combined, was 2.1199, the minimum 1.1148, average 1.6503. In seven healthy adults, killed accidentally, the dried *grey* substance of the cerebral hemispheres contained of phosphorus, maximum 1.4683 per cent., minimum 0.8245, average 1.2128. The dried grey substance in tuberculous subjects contained 1.6283 per cent. of phosphorus, in chronic alcoholic 1.1746. In cancerous, syphilitic, and acute alcoholic subjects, the percentages varied between these figures. A group of mentally diseased people, including cases of neurasthenia and epilepsy, was divided into two sub-groups: (1,) functional; (2,) destructive. In the first sub-group we find: Somatic epilepsy, in a woman aged twenty-five, 1.6723 per cent. of phosphorus in the dry grey cerebral substance; passive melancholia, in a woman aged forty-one, 1.6128; tranquil mania in a woman aged thirty-two, 1.5275; idiocy, in a man aged twenty-eight, 1.5054; average 1.5795 per cent. In the second sub-group are placed: Syphilitic pseudo-general paralysis, in a woman aged thirty, with a percentage of 1.2709 of phosphorus in the dry grey cerebral sub-

stance; epileptic dementia in a man aged twenty-four, 0'9327; dementia (after mania) in a man aged thirty-five, 0'9143; senile dementia in a woman aged sixty-seven, 0'6637; general paralysis, in a man aged forty-two, 0'5489; neurasthenia, in a man aged forty, 0'4742; senile dementia, in a man aged seventy-three, 0'2977; neurasthenia in a man aged thirty, 0'2973; average, 0'6750. The small percentage of phosphorus in the last four brains is especially noteworthy. Both the neurastheniacs died of tuberculosis.

The facts that the amount of phosphorus is much diminished in the destructive psychoses, and that it is surprisingly small in the brains of neurastheniacs deserve, remarks Gutnikov, special attention on the part of neuro-pathologists and psychiatrists. He frames an ingenious hypothesis to explain the apparent paradoxes in the results of his researches. It is briefly as follows: The phosphorized constituents of the brain have not equal significance from a functional point of view; some of them are intimately associated with the mental processes, whilst others are concerned with the automatic and reflex movements, the sensations, and the trophic and secretory functions. When the elements of the grey substance which produce the phosphorized constituents of the former category degenerate, there results one of the destructive psychoses, such as general paralysis or senile dementia. When these elements remain intact, whilst those producing the latter category of phosphorized substances deteriorate, the outward expression is the symptom-complex now known as neurasthenia. But when in this disease the degenerative process attacks the former class of elements also, there quickly supervenes one of the destructive and incurable psychoses, most frequently general paralysis. The excess of phosphates in the urine of many neurastheniacs is interesting in this connection, as is also the usefulness of phosphates³² in the treatment of neurasthenia. Gutnikov attributes the large amount of phosphorus in melancholiacs' brains to accumulation through diminished excretion. Here the phosphorus acts merely as useless ballast, whereas in mania with a rapid circulation of blood, it stimulates action. In melancholia the phosphates in the urine are diminished, and one of the first signs of recovery is the appearance of a mass of phosphates in the urine. In the idiot's brain the phosphorus was probably contained mostly in the inferior category of phosphorized elements. The somatic epileptic died in a fit, which fact would account for the large percentage of phosphorus, Gutnikov supposing the fits to be the immediate result of an accumulation, in the brain, of the lower class of phosphorized constituents. Mairet, Rivano, Bort, Haig, and others have found that after each epileptic fit the percentage of phosphorus

in the urine is markedly increased, the increase being directly proportional to the severity of the fit.

In the analysis of his notes of eighteen cases of organic dementia and paralytic idiocy, J. Shaw³³ states that general physical and marked mental weakness with persistent slight paresis or transitory attacks of paralysis indicated, according to the combination of symptoms, lesions single or multiple of the occipital, temporal, supra-marginal, precuneate, or prefrontal regions, or of the cerebellum; whilst permanent paralysis with or without contracture or atrophy was the outward expression of disease of the Rolandic area, or, though rarely of the convolutions (including the precuneus and first temporal) immediately behind or below it, or of the central ganglia or internal capsule, disease in the ganglia and capsule being generally combined with extra-Rolandic cortical or medullary lesions. Where the central ganglia were the principal seat of lesion there was much less mental deterioration than in cases with extensively diseased cortex. Taking the whole number of cases of cerebral paralysis met with in all classes of practice, the great majority, for mechanical reasons, are ganglionic, and only a few are seriously affected mentally. But in the cases here reported the patients were brought under observation through the prominence of the mental symptoms, and cortical lesions greatly preponderated.

In one case without deafness, either physical or psychical, there was considerable destruction of the posterior third of the first temporal convolution on both sides. Unilateral convulsions are often caused, in the writer's experience, by irritative lesions of the opposite temporal lobe.

Julius Mickle,³⁴ in an elaborate paper on atypical brain-forms points out that the standards of the normal brain hitherto chiefly in use were defective and even misleading, some of them having been merely diagrammatic, and others taken from subjects who have been failures in life—broken fragments of the wreckage of civilization, the indication of degeneracy and breakdown. From his examination of a very large number of brains the author concludes that there are defective and deviating types of brain development, correspondent to defective aberrant types of mental action and of outward conduct, and that, within a certain definite range, there is an agreement between brain conformation and clinical psychiatry. Superiority, irregularity, and inferiority of gyral and fissural states are the three great lines of departure from the usual average and normal. These deviations are each due to one or several of the following factors, viz. : (1,) Development defective, weak, slow, imperfect; (2,) Development deranged,

perhaps active, but giving rise to irregular and strange forms ; (3,) Development arrested more or less, with persistence of foetal character in place of advance to adult form ; (4,) Reversion towards brain-type of lower races of mankind ; (5,) Reversion towards types of brains of lower animals, especially apes ; (6,) Developmental superiority.

In the formation termed posterior parietal operculum, called by Mickle reversed occipital operculum, the more vigorously developed parietal lobe projects a little backward, and slightly overhangs the occipital. The cases with this form had more or less of the impress of hereditary mental degeneracy, with elements either of imbecility or of paranoia. Many of the subjects of hereditary mental degeneracy are in reality of microcephaloid type.

Relative smallness of occipital lobes, defective development of them, undue retention of foetal characters by them, reversion to lower animal form manifest in their morphology ; all are valid indications of deterioration and inferiority.

Andriezen³⁵ finds that in the brains of non-epileptic imbeciles sclerosis and microgyria are both conspicuous by their absence. When the epileptic neurosis is present, however, this process is also present. The positive or negative changes in the nerve elements themselves are present in varying degrees. It is in the combination of these two classes of pathological lesions that we find the surest indication, the seal as it were, of epileptic idiocy or epileptic imbecility in the brain.

TREATMENT.—*Acute Mania*.—J. Shaw³⁶ records a case in which $\frac{1}{100}$ of a grain of **Hyoscin Hydrobromate**, given subcutaneously in an early stage of the disease procured sleep and permanently arrested the excitement after chloral, the bromides, and cannabis indica had failed. The patient recovered rapidly, and in a few days was well mentally. The moral effect of the hyoscin seemed to be a factor in the cure. The patient had been under his care sixteen years previously in an asylum. In this recent attack the symptoms were typical of acute mania and differed in essential particulars from those of transitory mania or of acute delirium.

Referring to the above case, J. M. Morris³⁷ mentions one of aggravated chorea (a disease which has been described as the motor analogue of acute mania), in which $\frac{1}{80}$ grain of hyoscin, given hypodermically, procured sleep followed by total and permanent cessation of the movements after bromide, chloral, morphine and arsenic had been tried in vain.

Adolescent and Pubescent Insanities.—Elliott,³⁸ in the insanity of pubescence—under which head he includes the aggregate of pure

insanities occurring in youth—advises that the patient should be placed in quiet, pleasant, and healthful surroundings, with plenty of sunshine. The presence of any source of irritation should be ascertained; tight prepuce, phymosis, short frænum, congenitally small meatus, vesical stone, malformed clitoris, pruritis vulvæ, leucorrhœa, or cystitis may cause not only profound reflex effects but also provoke vicious habit—a habit which may be carried on not only unobserved but even without manipulation. To arrest the habit, careful watching and the removal of all provocatives are of the most service. Continuous exhibition of **Potassium Bromide** with **Hyoscin Hydrobromate** in small doses seems to be of some use in alleviating sexual irritation.

To repair the emaciation in the milder cases, or after acute symptoms have passed, the **Hot Spray Bath** two or three times a week claims first attention for its soothing and stimulating effect. Exercise in the open air, with tonics, especially **Strychnine** and **Arsenic** in small doses before meals, **Cod-Liver Oil** in teaspoonful doses, generous diet at regular intervals with meat in small quantities, regulation of the bowels, not too much restriction of the patient's actions, and very few sedative or hypnotic doses, seem to be the chief elements of good treatment in these cases.

In delirious cases and others refusing food and medicine, resort must be had at once to the stomach-tube. For the treatment of absolute insomnia in such cases, the author prefers to other hypnotics **Hyoscin** either alone or in combination with **Morphine**. He deprecates the routine use of chloral, and advises a trial of all the simple means of procuring sleep before resorting to hypnotic drugs. A hot bath or a glass of hot milk to which has been added a tablespoonful of whiskey, sometimes proves effectual. In most cases natural sleep will come unbidden, unless in the meantime the physician yields to the temptation to give his patient some powerful sedative for the sake of somebody else. In the treatment of very many of these cases the highest skill is patience.

Maclachlan³⁹ says that treatment in adolescent insanity should consist in mental distraction during the acute and sub-acute stages, with muscular out-door labour and plenty of good nourishing food. Clouston lays special stress on giving abundance of nourishment, chiefly in the form of milk and eggs. The bowels require careful looking after, and tonic treatment is greatly needed. **Iron Tonics** and **Cod-Liver Oil** and **Malt Extract** are very useful if the stomach will bear them. Masturbation habits require looking after. Cleanliness of the body is a great help here with good bowel action in the morning, aided, if necessary, by a teaspoonful of Epsom salts in $\frac{1}{3}$ of a tumblerful of

water, before breakfast. The **Bromides**, also, are very useful to allay sexual desires, and if hypochondriacal symptoms exist, the **Passage of a large-sized Bougie** occasionally will do good. When the acute symptoms pass away, the social instincts of the patient require fostering, as this will be the best prophylactic in future. The disease, in Maclachlan's opinion, is one induced by self-living and self-exhaustion, by bad habits and otherwise. If catarrh of the stomach be present, and the patient refuse food, **Lavage of the Stomach** will be necessary along with liquid foods, until the digestive power is restored.

General Paralysis.—Francotte ⁴⁰ has employed **Sulphate of Duboisin** successfully in allaying the excitement of general paralytics, and has succeeded, by giving it hypodermically, in overcoming the sitiophobia in several cases of general paralytic stupor, although in other forms of mental alienation the drug did not cause sitiophobic patients to take food.

Skeen ⁴¹ used **Sulphate of Duboisin**, both occasionally and continuously, in general paralysis during violent excitement, with satisfactory results. He gave the drug both hypodermically and by the mouth, generally in doses varying from $\frac{1}{100}$ to $\frac{1}{32}$ of a grain. On one occasion a congestive seizure followed the exhibition of the latter dose. He says the hypodermic method is the surer and safer, and is followed by fewer bad effects.

[This drug, however useful it may be in confirmed general paralysis, is not to be recommended for prolonged continuous use in other forms of insanity. *Vide* "Med. Ann.," 1897, p. 322.—J. S.]

Hydrocephalic Idiocy.—Peterson ⁴² thus describes the medical treatment of simple primary chronic hydrocephalus: The head of the child is shaved, and a **Capeline Bandage** applied for a week. After a week's rest this is renewed, or, if any incident contraindicates this, **Daily Friction** with **Mercurial Ointment** is substituted. At the same time **Calomel** is administered twice weekly in $1\frac{1}{2}$ -grain doses. Every month, for a year or more, a **Vesicatory** is applied to the head for from fifteen to twenty hours, and, when it begins to dry, compression is again employed. In addition to this, **Exercise**, **Massage of the Limbs**, **Salt Baths**, **Douches**, **Tonics**, etc., are used as required. Pedagogic treatment is important for this class of cases when cure or arrest of the disorder seems evident.

Amongst surgical procedures craniectomy with drainage may be altogether excluded now-a-days from the category of expedients. Puncture of the lateral ventricles promises but little more, and had best be abandoned.

Trephining of the Occipital Bone, three-quarters of an inch below the superior curved line, to the right of the middle line, with subsequent enlargement of the opening downward, and the insertion of a probe into the fourth ventricle, is an operation which was proposed by Parkin and carried out in four cases, two of which recovered. This method deserves a more extensive trial. A similar measure, successfully tried, is **Trephining in the region of the Temple**, and insertion of the cannula into the subarachnoid space of the fissure of Sylvius.

Lumbar Puncture (procedure described in "Med. Ann.," 1897, p. 398), has been employed in hydrocephalus by Fürbringer, Hübner, and Ewald, who report temporary improvement, but the method has been too little used to allow of definite conclusions, though several cases of recovery have been reported.

Operation does not preclude the employment of other means. Horizontal bandaging of the head with a **Wide Rubber Bandage** after tapping, and the use of **Cod-Liver Oil** and **Phosphorus** are certainly of considerable service, and should not be neglected.

Melancholia and Neurasthenia.—Allison⁴³ observes that while neurasthenia is held to be a disease distinct from insanity, yet the two are closely allied, and many cases of neurasthenia are simply cases of mild melancholia. An important pre-requisite to treatment is to place the disease upon a physical basis in the patient's own estimation of himself, and to divest it of its mental character. Let the melancholiac know that there is a physical basis to his ills, and you drive away the demon of vague and indefinable fear, and gain thereby a most helpful mental effect. The gaining of the patient's confidence is an important factor in the successful treatment of these cases. The constipation so common in melancholiacs, leading often to copræmia or fæcal auto-toxis, demands early attention. The pill of **Aloin**, **Strychnine**, and **Belladonna**, continued day after day, is a most excellent remedy. **Calomel** in occasional doses of a $\frac{1}{2}$ or a $\frac{1}{10}$ of a grain acts as a laxative and intestinal antiseptic. The acquisition of the habit of defæcating at a certain hour should be inculcated. The **Aperient Mineral Waters** taken regularly are useful. Melancholiacs need more than the usual amount of food, yet the appetite is not often good. Gain in weight is one of the criteria of successful treatment, and is often the first evidence of returning health. In certain cases of obstinate dyspepsia it is sometimes necessary to resort to **Lavage of the Stomach** before meals, but simple aids to digestion will ordinarily be sufficient. The drinking of **Hot Water** sometimes answers a good purpose. Reliable preparations of **Pepsin**, in 10

or 15-grain doses, or other digestive ferments are of service. **Nitro-Muriatic** or **Hydrochloric Acid**, **Sub-Gallate of Bismuth**, **Salol** in 2 to 5-grain doses, **Naphthalin** in 1 to 3-grain doses, are all useful, and it is necessary to vary the drugs used from time to time. **Cod-Liver Oil** and nourishing diet with plenty of eggs, milk, and butter are indicated. Attention should be paid to the patient's clothing, and only moderate and pleasant exercise should be taken.

For sleeplessness, the true cause of the patient's worry should be found out and, if possible, removed. **Hyoscin**, in the initiatory stages, in small doses, is often of service; a single dose of **Chloral** or of **Chloral** and **Bromide** combined, often acts well; **Sulphonal** or **Trional** acts well if given in divided doses, the first about three hours before bedtime, and the second portion shortly before retiring. A glass of dry wine or an egg-flip, or a full meal even, will dispose the patient to sleep.

The two important indications are to eliminate the intestinal self-infection, and thus purify the blood from toxic agents, and at the same time do away with the starvation of the tissues from unassimilated and insufficient food. These cases of moderate melancholia are most hopeful, though the treatment is usually somewhat prolonged.

Woods,⁴⁴ of Hoxton, has treated several cases of melancholia successfully by **Hypnosis** and **Suggestion** after ordinary asylum treatment had proved ineffectual. He has also found suggestion useful without hypnosis.

Binswanger⁴⁵ lays great stress on the regulation of environment as a prophylactic against neurasthenia, and is equally insistent on its importance in treatment. He attributes some importance to the effects that may be brought about by **Simple Suggestion**. He condemns the actual production of the hypnotic state, but confesses that much good has been done by the French school by showing what may be done by simple and persistent suggestion.

Gasquet and Cones,⁴⁶ as the result of their clinical researches on age in relation to the treatment of melancholia, find that patients of fifty years of age and over rapidly improve under the use of **Opium**, whilst those of about thirty years of age and under are made notably worse by it, and those between the ages of thirty and fifty react uncertainly to it, improving more slowly, when they do improve, than the older patients. The form is not important, but Gasquet and Cones prefer the B.P. tincture. The dose should be rapidly pushed to the limits of tolerance, and continued sufficiently long to give it a fair trial. In looking for a substitute for opium in cases of melancholia in the first half of life, no drug

gave these observers such good results as **Sulphonal**. They did not find it necessary to give a larger quantity than 30 grains. They always began with this dose, and never gave it more frequently than every night. When the patient seemed to be drowsy during the greater part of each day, or when giddiness was complained of, the frequency of administration, but not the dose, was diminished, and the drug finally discontinued after gradually increased intervals.

Senile Insanities.—Parsons⁴⁷ advocates the gradual lessening of physical and mental toil, rather than its cessation, as the powers begin to fail with age. The promotion of restful sleep and the ingestion of an adequate quantity of suitable food are important points in the prophylaxis of the senile insanities whether maniacal, melancholic, or typical (primary senile dementia). To this end the encouragement of regular hours of sleep and of a quiescent and indifferent mental state is important. A **Warm Bath** at bedtime with cold to the head, a **Cold Douche** to the feet and legs or **Wet Pack** to the abdomen, a light supper just before retiring, a glass of milk and a biscuit on awaking in the middle of the night or towards morning, or a glass of warm milk in the early morning before rising will often help to promote sleep. In an acute attack of actual insanity, if it is decided to treat the patient at home, his domicile should be made a private hospital for the time being, with efficient supervision. If forced alimentation is required, it should not be delayed. If hypnotics are deemed advisable they should be varied so as to avoid establishing tolerance of any one of them. The **Wet Pack**, **Electricity**, or **Massage**, is sometimes useful. In senile dementia, a cure being no longer to be expected, such patients as have a home and devoted friends ought not to be removed elsewhere for care and treatment.

Thyroid and Thyroidin in Insanity.—Perry,⁴⁸ studying the effects on the blood of **Thyroid Feeding** in ten cases of various forms, found that there was no constant, decided, or characteristic change in the appearance or number of the white blood corpuscles. But there was an increase (proportional to the increase in the dose of the drug) in the percentage of the small mononuclear cells or lymphocytes, and a corresponding diminution in the multinuclear neutrophiles, in every case. He believes that the drug acts as a direct stimulant to the lymphatic or adenoid tissues, whose function is the production of lymphocytes. Perry supposes the temporary mental amelioration, which he sees in some cases, to be due to stimulation of some of the tissues connected with the function of

hæmatisis which, previously sluggish, elaborate and turn into the circulation, after a vigorous course of thyroid, some principle having a beneficial action on the cortex.

Shulansky,⁴⁹ in fifteen cases of chronic insanity, found that **Thyroidin** had no influence whatever on the mental condition. The pulse invariably increased in frequency and became softer, though remaining fairly strong. There was diminution of weight to a certain minimum, with marked increase after discontinuing the administration. In some of the patients there was a rise of temperature. In some cases there were fibrillary muscular twitchings and increased perspiration. A prolonged administration produced gastro-intestinal disturbance.

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INSANITY (in Children).

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Although ancient writers have given short descriptions of mental diseases affecting children, it was not until the commencement of this century that the subject began to attract attention. Since then authors in England, Germany and France have described some of the mental diseases affecting children, but still there seems to be a good deal of want of knowledge concerning them. It is the object of the writer to describe these mental affections and to give such knowledge

as may enable the practitioner to deal with the cases which may come under his care.

The most important *causes* are heredity, the imitative faculty, a severe shock or fright, excess in study, the establishment of puberty, masturbation, and acute affections such as meningitis, scarlet fever, pneumonia and typhoid fever.

As regards the *age* at which insanity is noticed, Dr. Berkham¹ has collected particulars of forty-seven cases. On analyzing these it appears that twenty occurred between the ages of ten and eleven years, though as many as thirteen appeared between the ages of seven and nine years. In one case, a child nine months old was affected with the disease. Of thirteen cases which have been under the writer's care, one occurred at nine years and two at ten years; the others showed mental disease at the age of twelve years and upwards. From these figures it appears that proclivity to insanity seems to increase with the age of the children.

As regards *sex* twenty of the forty-seven cases were boys and fourteen girls; the sex of the others was not stated. Of the thirteen cases which were under the writer's care eight were boys and five girls. So far as information at present goes, it seems that more boys than girls are affected with insanity.

As far as *age* is concerned, there is no doubt that up to seven years of age, convulsions and arrest of intelligence are most commonly observed, although delirium is often seen as the result of febrile affections. From seven to fourteen years of age true mania and melancholia are most frequent, while hysteria shows itself very often as soon as the menses appear.

Among the psychical diseases met with *dementia*, or obliteration of mind, is fairly commonly seen. This form of insanity must not be confounded with idiocy; in the latter case the mental faculties are congenitally absent and have never been present, whilst in the former they have existed but have become diseased. Dementia may be acute or chronic; in acute dementia there is a temporary extinction of the mental faculties; in chronic dementia there is a more complete destruction. Acute dementia frequently occurs between the ages of ten and sixteen, and the writer has seen several cases of it in young girls. It differs from senile dementia in that the imperfect nutrition of the nervous system is the chief cause of it, and generous diet and other means that build up the nervous system speedily cure it.

Juvenile dementia, as a result of inherited syphilis, is occasionally met with. Mental deficiency is noticed at the age of the second dentition, and from this time gradual deterioration ensues with some-

times epileptic and paralytic seizures, and death occurs in three or four years. The writer had a well-marked case under his care, in which, after death, the brain was found to be small in size, and there was thickening of the membranes and diminished calibre of the cerebral arteries.

Monomania or *delusional insanity* is described by Esquirol² "as a chronic cerebral affection without fever, characterized by a partial lesion of the intelligence, the affections and the will." The intellectual form is based on illusions, hallucinations, or delusions, concentrated upon a single object, outside of which the patient feels, reasons and acts like sane people. There is usually an exaltation, or undue predominance of some one faculty. The writer had a case under his care at Darenth—a girl, aged twelve years, who was full of religious delusions. As far as hallucinations are concerned, Moreau³ is of opinion that while those of the adult may be gay or sad in character, in children they are in ninety-nine times out of one hundred sad. The hallucinations of sight consist of armed men who menace the child, of red or black devils, of corpses dressed up, and so on. Those of hearing are terrifying in character. Theomania, in which the patient affected believes himself a deity, demonomania, in which the patient believes that he is demoniacally possessed, kleptomania, pyromania, in which there is a tendency to destroy by fire, and dipsomania occur in children; but it is not necessary to discuss these affections, as they are, with the exception of kleptomania, not commonly seen.

Erotomania has been observed in early life; the expression of the face and the features have an amorous languor, but, as a rule, the children so affected are chaste. For the most part, the disease lasts for a short time, but individuals predisposed to insanity often fall into so much physical and moral languor as to constitute what the French call "cachexie amoureuse."

Far more important is *nymphomania* and *satyriasis*, due, no doubt, to the influence of heredity and exaltation of the general sensibility. Instances are on record in which the affection has been seen at a very early age; satyriasis has occurred in boys only three years old, and in girls cases of pregnancy have been observed at nine years of age. Buchan⁴ states that the first symptoms of nymphomania have been observed in a girl three years old, who was in the habit of throwing herself into the most indecent attitudes, and indulging in the most licentious movements.

Homicidal mania occurs not only as the result of imitation, but the influence of heredity and an overpowering impulse must also be

taken into account. Homicidal mania has been observed at an early age. Esquirol⁵ relates the case of a child, aged four years, in whom the instinct to murder revealed itself suddenly; he armed himself with a knife, and stooping over the cradle of a baby ten months old, cut its nose and made horrible gashes on the body. Recently the newspapers contained an account of a boy, seven years old, who was returned for trial at the assizes for the murder of his brother, aged six months. In this case the influence of heredity was very marked; the mother had been confined in an asylum two years ago, and all her children were weak-minded.

Melancholia appears incompatible with early life, but the buoyancy and gladness of childhood may give place to despondency and despair. It may be sudden or insidious in its attack; a primary disorder, or the sequel of some other form of insanity. There are two forms; the first, a pure, abstract indefinable depression; the second, a despondent condition, having relation to religious matters or a future state. In the case of a boy, aged sixteen years, who was under my care at Darenth, the parents were nervous, excitable, irritable, and subject to nightmare. The boy was born when the mother was very hard worked. When fifteen years old, he came home for his holidays, not knowing that his grandfather was dead. Five days afterwards he awoke out of sleep and said he was dying. He saw visions, became melancholy, restless, and careless of consequences.

As to *suicide* in early life, there are numerous instances. In these cases heredity exerts a great influence, but very often there is an overpowering impulse; or terror produced by certain hallucinations will cause the child to commit suicide. The fear of reprimand, or bad treatment, is a frequent cause of suicide, as are also self-love and disappointment at not obtaining a high position in school. Falret mentions a case in which a child, aged twelve years, committed suicide because she was twelfth in her place in class.

Mania is characterized by a general delirium, with loquacity, incoherence, intellectual excitement, and delirious conceptions. The movements are violent and incessant. The children cry, run about, laugh, sing, break and destroy things, undress themselves, and do everything without aim or design. The muscular strength seems to be increased, and one sees young children overcome obstacles and lift heavy articles with extraordinary facility. In this form of mental affection delusions are more frequent than hallucinations.

Kelp⁶ gives the case of a boy, aged thirteen years, who suffered from *folie circulaire*. He was a dull child, and had been so often punished at school, that he became deeply melancholy, and tried to kill himself.

The melancholia alternated with mania, during which he whistled and sang day and night, tore his clothes, and was filthy in his habits.

Choreomania consists chiefly of capriciousness, irritability, and a great tendency to sudden emotional disturbances. Hallucinations, illusions and maniacal delirium may also occur. Leidesdorf has directed attention to the resemblance of choreic to toxic insanity, as supporting the view that chorea may be of infectious origin.

Moral insanity is of frequent occurrence in childhood. I have seen several cases, though in America it seems to be of more frequent occurrence than in England. The intellectual faculties are unimpaired and the child is usually sharp and clever, but morally he is a thief, a liar, full of cunning, horribly cruel, and often of immoral tendencies. When remonstrated with, he will express contrition and promise amendment, but these promises are soon forgotten and a fresh outbreak occurs.

Hysteria has been frequently noticed. Tables have been published of the various ages at which it most frequently occurs, and from a study of them it seems that hysteria rarely appears before the age of six or seven years. As in the adult, so in the child, it presents the convulsive and non-convulsive form. Rarely there is a convulsive attack; more commonly it commences with intellectual disorders and with various troubles of sensibility and movement. Usually those affected have a lively appearance, a keen imagination and intelligence, and seek to draw attention to themselves by exaggerating their sufferings. These cases are extremely impressionable, and laugh and cry on the slightest provocation. The will is weak. Hysteria is more common in girls than boys, but when the latter suffer from the affection they become timid, and blush and lower their eyes when one puts a question to them. They will not play with boys of their own age, but prefer the games of little girls, such as playing with a doll.

Cases of *general paralysis of the insane* are said to have been observed in children, but they are of such rare occurrence that it is not necessary to describe the symptoms observed.

The *diagnosis* of most of these forms of insanity is easy. The chief difficulty arises in distinguishing mania from the delirium which appears in the course of acute diseases. *Cerebral congestion* and *acute meningitis* may be mistaken for mania and *vice versâ*. But in *meningitis* the pulse is full and strong, and the temperature raised; there is headache, vomiting and convulsions. The pupils are contracted and strabismus will be observed. In *mania* the pulse is only slightly quickened notwithstanding the violence of the outbreak, and there is no vomiting nor convulsions.

Asthenic pneumonia and *typhoid fever* are sometimes accompanied by violent delirium which masks the essential symptoms of the disease, but the delirium of these diseases is always preceded by a long or short febrile period, and an examination of the patient will reveal the symptoms characterizing these affections. In mania the febrile period only becomes developed at the time when delirium is at its highest point of intensity.

As regards *prognosis*, the presence or absence of hereditary predisposition will help to decide whether the patient will recover, or if he recovers, whether there is likely to be a relapse. Generally one may say that if a child has an attack of mania, melancholia, or other mental affection, and there is no history of hereditary predisposition or masturbation, the prognosis will be favourable; on the other hand, if heredity is well marked and masturbation is much practised, the prognosis will be bad, especially as regards the future. An exception must be made in the cases of juvenile dementia, the result of hereditary syphilis, moral insanity, general paralysis, and usually nymphomania and satyriasis; in these cases the prognosis is always bad.

TREATMENT.—As to treatment, **Opium** is rarely necessary; when sedatives are required, a **Warm Bath** daily will be found useful, and when there is intense delirium, we can add to this the application of **Cold to the Head**; in other cases a **Wet Pack** will be found preferable. The administration of **Bromide of Sodium** in doses according to the age of the child, will act as a calming agent, especially in cases of epileptic mania. If there is great sleeplessness, **Trional** should be given in doses varying from 3 to 12 grains, according to the age of the child, taking care not to continue the drug too long. A tonic treatment is to be aimed at in order to restore the strength of the patient, and in those who masturbate in addition to restraining the hands, the administration of **Quinine** will be found convenient. **Cod Liver Oil** and **Extract of Malt** will help to reduce any emaciation which may be present. Care must of course be taken to keep the bowels well open. **Open-air Exercise** is to be employed in all cases, but **Gymnastics** should be made use of as a recreation in cases of melancholia, and as a regulator of movements in choreic insanity. In some cases it will be necessary to stop all intellectual occupation, in others to encourage it and also make the child interested in the general affairs of life; in the higher classes of society the study of painting, literature and the modern languages, and employment in carpentering and gardening for the boys, and fancy work for the girls, will materially aid the cure. One of the most important parts, if not the most important, of the treatment is the separation of the child from his friends; among strangers he will be

obliged to conform to the rules of the house, and carry out the treatment which has been ordered. Visits from friends should be permitted rarely at first, and regarded as a favour or reward for good behaviour. Under these circumstances mental amelioration will proceed much more rapidly.

With regard to *moral insanity*, Dr. Jules Morel, who has seen a good many children suffering from it in Belgium, advocates special institutions for them. I also think they should be put into institutions in which they should undergo industrial training and be kept under control during the period of their lives. If allowed to be without control, they are sure to commit some act which will bring them in contact with the law. The result of this will be that they will most probably be sent to prison, and this is not the proper place for them. Failing these institutions, they should be put under the care of a medical man, or in a home where they can have strict medical supervision and be kept under control.

The *prevention* of insanity in childhood is most important. Life in the open-air, work in a garden or on a farm, recreation of all sorts, absence of forced, prolonged intellectual labour, and the suppression of excessive emotion, are the chief hygienic conditions in those predisposed to disease. To strengthen the body first is the main point, and having laid a good foundation, we can then proceed to educate the mind. In many cases the opposite view has been held, and children's minds have been pushed on with no regard to their physical condition, and insanity or severe nervous disease is the result. I see children of this kind every year. Fortunately of late various societies have sprung up, whose object is to study the development of the mind of the child, and endeavour to guard against over-pressure. Medical men should endeavour, whenever an opportunity occurs, to impress upon parents the importance of bringing up their children under the hygienic conditions above mentioned.

REFERENCES.—¹"Corresp.-Blatt. d. Deut. Gesellschaft für Psychiat. u. Gerichtliche Psychologie," 1863; ²"Malad. Mental.;" ³"La Folie chez des Enfants"; ⁴"Des Causes morales et physiq. de Malad. Mental.," p. 249; ⁵Ibid.; ⁶"Allgem. Zeits. f. Psychiät.," Band xxxi., Heft. i.

INSECT BITES.

T. Colcott Fox, M.B.

Ottinger¹ greatly prefers **Ichthyol** to ammonia to relieve the pain, burning, itching and swelling. He paints pure ichthyol over the wound; or a paste of ichthyol and lanolin or vaselin in equal parts may be used. Ichthyol gutta-percha plaster (10 per cent.) can be recommended. Pure ichthyol or the ichthyol ointment should be reserved

for the severe cases. The author has seen good results produced when the whole of the arm was swollen and painful. In such a case the arm can be painted with ichthyol, then covered with gutta-percha tissue, and the whole enveloped in ice.

As a preventive of insects' bites the following formula² is given :—

R _x Acetic Ether	5 parts	Cologne Water	10 parts
Eucalyptol	10 parts	Tincture of Pyrethrum	50 parts

Dilute with four or five times its bulk of water, and apply as a lotion.

REFERENCES.—¹"Münch. med. Woch.," Dec. 8, 1896; ²"Gaz. hebdom. de méd. et de chir."

INSOMNIA.

Græme M. Hammond, M.D., New York.

The following prescription is recommended in nervous insomnia :—

R _x Formamidate of		Tincture of Ginger	10 gm.
Chloral	10 gm.	Dist. Peppermint Water	150 "
M.	Sig.—A dessertspoonful at night.		

REFERENCE.—¹"Med. Rec.," March, 1897.

INTESTINE (Suture of).

Priestley Leech, M.D., F.R.C.S.

Taylor¹ reports two cases, one of end-to-end intestinal anastomosis, the other a lateral posterior gastro-enterostomy, in which a double row of glover's sutures were employed to secure union of the bowel. The method employed was that described by Doyen : A continuous glover's suture embraces all the coats of the intestine, the mucous the least, and unites the cut margins of each wound to that of the other, thus forming a continuous mucous canal, free from the scar tissue which results after the sloughing out of a button. A second glover's suture unites the serous surfaces at a little distance from the wound. Taylor believes that although the Murphy button and other similar means are useful in emergency cases, better results can be obtained in an operation *au froid* by the use of the suture which he inserts with a round curved needle with no cutting edge.

Ball² reports four cases with three recoveries of intestinal anasto-



Fig. 41.



Fig. 42

mosis treated by means of a new pattern of decalcified bone ring invented by himself (Fig. 44). Aacing suture (see Fig. 41) is first

passed through all the coats of the intestine about one-eighth of an inch from the cut edge. Commencing with the piece of gut to the surgeon's left hand, the needle is passed through from peritoneum to mucous coat, leaving the fore end of the suture hanging from the outside of the bowel (*Fig. 42*); the needle is then entered at the mucous surface of the piece of intestine to the surgeon's right hand; in this way the suture is continued round the intestine, always entering the needle at the outside of the left hand piece and the inside of the right hand piece. The bone ring is introduced between two of the loops, and the suture is tightened by pulling upon it loop by loop as in lacing a boot, thus drawing in and involuting the cut edges of the intestine into the groove of the ring and bringing their peritoneal surfaces into contact (*Fig. 44*); the two ends of the suture are then tied, and a second fine continuous suture is passed round the



Fig. 43.

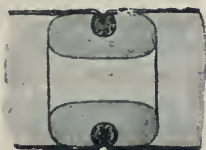


Fig. 44

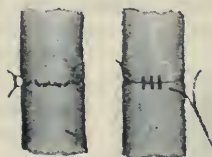


Fig. 45.

outside through the peritoneum alone (*Fig. 45*). He says that this method is more rapid than Murphy's button when it is properly understood. The rings are made in different sizes and with unequal halves for suture of different sized intestine, *e.g.*, colon and ileum (*Fig. 43*).

Cheate³ has planned the following operation from experiments on the cadaver, and one experiment, which was successful, on the living animal. After section of the bowel exactly at right angles to its longitudinal direction, a longitudinal incision is made in each end of the divided intestine opposite the mesenteric attachment. The incision goes through all the coats of the bowel, and its length must be at least equal to the diameter of the tube at the seat of resection (*Fig. 46*). These incisions allow the open ends of the intestine to be spread out in the shape of a fan, and while in this state the serous surfaces can be exactly apposed as it were back to back (*Fig.*



Fig. 46.

47). An assistant keeps them in this position until they are sutured. The first suture should fix in apposition the mesenteric attachments ; the two next should accurately join the respective extremities of the edge of the fan-shaped expansion. The rest of the sutures can be inserted with greater exactitude. Each suture must transfix all the coats and must be tightened at the first knot. The longitudinal incision may be sutured by any of the well-known methods. Care must be taken that its edge be well sequestered by the approximation of its serous surfaces, the site of the four corners being the weakest point (*Fig. 48*). The same method can be used to join the



Fig. 47.

small gut to the large. After the small intestine has been sutured to the colon there are two superfluous flaps of the colon on each side ; a portion of these is cut away in a V-shape so that the apex of the V is exactly in a line with the preliminary incision into the free end of the small intestine. The remaining superfluous part of these two edges can be inverted by the Lembert's suture that is employed while sewing up the longitudinal incision.

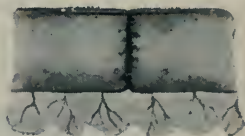


Fig. 48.



Fig. 49.



Fig. 50.

Messrs. Jaboulay and Briau⁴ recommend the following method : Two sutures are first passed through the serous and muscular coats of the ends of the intestines to be united, one on each side, between the mesenteric attachment of the bowel and the part most distant from the mesentery but slightly nearer to the mesentery than to the opposite pole (as in *Fig.*



Fig. 51.



Fig. 52.

49, B is mesentery). These ligatures are not tied but are held by an assistant with a pair of forceps. Light traction on the ligatures

renders suture of the posterior and shorter part of the circumference of the bowel very easy (*Fig. 50*). A continuous silk suture is made to unite the sero-muscular coats of this portion of the bowel, and the corresponding mucous and submucous coats are similarly brought together (*Fig. 51*). The anterior part is sutured in a similar way, the mucous and submucous coats first, and then the muscular and serous coats (*Fig. 52*). This plan has been tried successfully on dogs.

Messrs. Edmunds and Ballance⁵ say that Halstead's method of lateral anastomosis, and Mannsell's method of end to end, or end to side union, give the best results.

H. Küttner⁶ recommends the side to side union of the ends of resected intestine after the method of V. Frey. V. Frey had only tried the method experimentally, but it has been tried on six cases in Bruns' clinique. The cases were ileo-cæcal intussusception, cure of an artificial anus, and four cases of gangrenous hernia. Two of the cases died—the intussusception from croupous pneumonia, and a bad case of gangrenous hernia from peritonitis. The advantages claimed for this method are : a greater surface of peritoneum can be brought into contact without lessening the lumen of the intestine ; intestines of unequal diameters can be better joined ; the opening between the two portions of intestine can be made larger than natural, and the nutrition of the junction is under more favourable conditions than in circular suture of the intestine, as the junction is nourished by the vessels of the mesentery instead of the small vessels which supply just the portions of intestine joined together, and in inflammation of the intestine associated with gangrene, this may be very important. The technique of the operation is shortly as follows : The intestine is clamped on either side with Kocher's clamps, and the piece to be resected removed by scissors ; the ends are wiped with sublimate sponges, and the mesentery tied, etc. The two ends are then laid close to each other and united by a row of continuous Lembert's sutures. About a quarter of an inch ($\frac{1}{4}$ cm.) from this row of sutures an incision is made on either side through the serous and muscular coats of the bowel (*Fig. 53*) ; this incision is less than the length of the suture by nearly a quarter of an inch at either end ; the length of the incision corresponds to the size of the intended

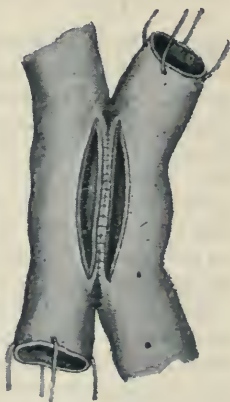
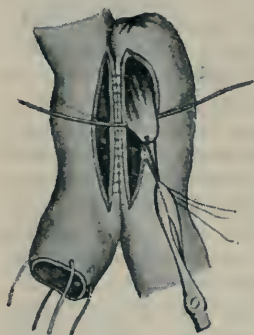
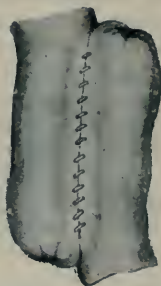


Fig. 53.

opening between the bowels. Another row of continuous suture is passed joining the two edges of the incisions. The upper part of the intestine is emptied by finger pressure of its contents, and the mucous membrane cut with scissors and a piece of the intestinal wall removed to make an opening of the required size. The mucous membrane of the intestine is then cleaned and the two threads passed through at right angles to each other immediately below the clamp; the clamp is then removed and the end invaginated (as in *Fig. 54*) by forceps, a ligature passed round and

*Fig. 54.**Fig. 55.**Fig. 56.*

tied, and the superfluous end cut off. The distal portion of the intestine is treated in the same way, the mucous membrane being cleaned as well as possible by sublimate mops so as to prevent soiling of the peritoneal surfaces. The condition is then as in *Fig. 55*. A third row of sutures is passed through the serous and muscular coats, care being taken that no mucous membrane projects. The ends of this continuous suture are tied to the ends of the second suture which have been left long. A fourth suture of Lembert is then passed, and the ends tied to the ends of the first Lembert suture, which ends have also been left long. The operation is then finished (*Fig. 56*).

Schiller⁷ has a long paper on intestinal operations in the Heidelberg clinique during the last four years. A history of the cases is given, and the mortality of the various groups worked out.

REFERENCES.—¹ "Birming. Med. Rev.," Feb., 1897; ² "Brit. Med. Journ.," April 24, 1897; ³ "Lancet," May 27, 1897; ⁴ "Lyon méd.," April 18, 1897, quoted in "Practitioner," Nov., 1896; ⁵ "Trans. Med. and Chirurg. Soc.," Lond., 1896; ⁶ "Beitr. z. Klin. Chir.," Bd. xvii, Hft. 2; ⁷ *Ibid.*, Hft. 3.

INTESTINE (Ulcers of).*Prof. R Saundby, M.D., F.R.C.P.*

Chvostek and Stromayr¹ have made some investigations that promise valuable aid in the diagnosis of ulcers of the intestine. The experiments were based on the older observations regarding albumosuria (formerly called peptonuria) in ulcerative diseases of the intestinal canal. The authors concluded that the negative results in many of these cases were probably due to the fact that albumose was absorbed in quantities too small to be detected. They therefore gave to persons with various diseases comparatively large quantities of albumose, such as 40 to 60 grammes of peptone (*peptonum siccum*, Germ.) or somatose. Usually cases were selected in which there was no albumin in the urine, or at least no albumose. It was found that in the cases with ulceration of the intestine albumose could be detected; whereas in persons without ulceration, even large quantities of albumose could be taken without appearing in the urine. It is evident that in some cases of intestinal ulcer there may be temporary or permanent causes which prevent the absorption of the albumose, so that negative results cannot be looked on as proving the absence of ulcer. The cases now reported show the great value of the method, a diagnosis being made in several when there were no symptoms of ulcer, and confirmed post mortem. The subject offers an interesting field for further investigations.

REFERENCES.—¹"Wiener klin. Woch.," No. 47, 1896; "Amer. Journ. Med. Sci.," April, 1897.

INTUSSUSCEPTION.*Priestley Leech, M.D., F.R.C.S.*

Dr. Crawford Renton¹ reports three cases successfully treated by abdominal section, and Mr. Pitts² reports seven successive cases in infants with six recoveries. The average age of the acute cases was nine and one-fifth months. Two cases were chronic and needed incision of the colon and removal of irreducible bowel. With proper precautions abdominal section may be performed in children under one year of age without great risk from shock. The temperature of the body must be maintained by wrapping the extremities in cotton-wool, operating on a hot water cushion, and carrying out the manipulations quickly and with great gentleness.

Mr. Pitts comes to the following conclusions: (1,) In cases of acute recent intussusception reduction by air or water combined with gentle external manipulation may be tried, but the surgeon should be present to operate at once if this is unsuccessful. In many cases inflation reduces part of the tumour but leaves an irreducible portion in the right iliac and lumbar regions. This aids the subsequent operation as the tumour is smaller and a less incision is required. Should

inflation apparently have succeeded and further abdominal symptoms continue, operate at once; (2,) Explore without inflation if from severity of the symptoms or chronicity of the case, it is believed inflation would be dangerous or unlikely to succeed. The time taken up by inflation adds considerably to the shock; (3,) Median incision most suitable, but if tumour is in cæcal region an incision in right semi-lunar line may be made; (4,) No fixation of bowel to prevent recurrence is necessary. All the children were given small doses of tincture of opium and kept under supervision for some time; (5,) If reduction is impossible, a resection inside the colon would seem to afford the best chance. The junction between large and small bowel must be made secure before any part is cut away.

Dr. Holme Wiggin³ has a paper on the study of a hundred and three cases of intussusception treated by laparotomy or enemata. The percentage of mortality under abdominal section, if the cases be taken since 1889, when the technique of abdominal section was perfected, is 22.2 per cent., a mortality which Wiggin thinks represents the risk to-day of the operation, if undertaken within the first forty-eight hours of the onset. He thinks that treatment by inflation and by water will be relegated to the limbo of unused remedies.

Mr. Pickering Pick⁴ gives some very good practical advice on this subject. The difficulty of finding a tumour is well known, and he says that a bimanual examination made through the parietes of the abdomen and rectum will often discover a tumour when rectal or abdominal examination alone has failed to reveal it. He recommends first inflation of air by a pair of bellows or Lund's inflator, and then, if this does not succeed, laparotomy. If inflation succeeds (the surgeon should have his hand on the abdomen of the child so that he can feel the tumour), he will feel not only that the tumour disappears, but that the air will become diffused over the whole abdomen, so that what was at first distension of the colon becomes a uniform distension of the abdomen. He attaches more importance to this than to mere disappearance of the tumour, for this latter sign is misleading. In irrigation with fluid no attempt should be made to introduce it with a syringe, but not more than a pint and a-half of saline fluid at a temperature of 100° F. should be introduced by a reservoir elevated at a not greater height than three feet above the child's nates; more pressure than this is dangerous. He disagrees with Dr. Wiggin's estimate of the mortality, because all the unsuccessful cases treated by laparotomy are not reported. In inflation by gas from a siphon, etc., the pressure cannot be regulated as in the use of bellows, and he therefore prefers the latter.

The Hunterian lectures of Mr. D'Arcy Power, in the early part of the year, dealt with this subject. He says irrigation is to be preferred to inflation because the force employed can be gauged with much greater accuracy, and the apparatus is always at hand; it is, however, of no use in the enteric form of intussusception. Inversion of the patient does not render irrigation more successful, and a long-continued distension under low pressure is of more avail than rapid dilatation under high pressure. Should this fail laparotomy should be performed.

REFERENCES.—¹"Brit. Med. Journ.," Oct. 19, 1896; ²"Lancet," June 12, 1897; ³Ibid., Aug. 28, 1897; ⁴"Quart. Med. Journ.," Jan., 1897.

IRIS (Disorders of).

William Oliver Moore, M.D., New York.

Rupture of Iris.—Harlan¹ finds separation of the iris from its *ciliary border* from contusion, comparatively frequent; rupture of its pupillary border much more rare; rupture in the continuity of the membrane the rarest still, and he has not found any record of a case of the radiating form of the latter. He reports six instances of pupillary rupture, and two of radiating rupture in the continuity of the iris. In the five cases remaining under observation, from four weeks to three years after the injury the *mydriasis* was permanent.

In two the *accommodation* was the same as on the sound eye, and in two it was only partially suspended. It is probable that small ruptures of the sphincter are much more common than is usually supposed; they have been doubtless the cause of *mydriasis* in many cases that have been looked upon as paralytic.

Iritis.—Oliver² concludes: (1,) That **Hydrobromate of Scopolamin** is of the greatest value in the local treatment of the various forms of plastic iritis; (2,) The primary reparative action and the quieting power of this drug, as compared with similar doses of sulphate of atropia, are more prompt by this than the latter drug, even when the atropin is used four and five times stronger; (3,) The duration of the healing and soothing powers of scopolamin hydrobromate, as compared with those of equal doses of atropin sulphate, does not seem to be so lasting with the former as with the latter drug, this being true when the latter drug is used in four or five times the strength of the former; (4,) For quick and active measures, which are so necessary in incipient cases of plastic iritis, scopolamin hydrochlorate is to be preferred to atropin sulphate; (5,) The best solution is a $\frac{1}{10}$ of 1 per cent. strength (1 to 500), using 2 drops at a sitting, repeating it, if necessary, as often as three times during the course of an hour, preceded, if necessary, by a solution of cocain hydrochlorate.

Juler³ says the best mydriatic in plastic iritis is **Atropin Sulphate**, .1 per cent. solution, or as an ointment of the same strength. If atropin causes irritation of the conjunctiva or skin of the eyelids, **Duboisin Sulphate**, 0.5 per cent., or **Scopolamin Hydrochlorate** of similar strength may be used. **Cocain Hydrochlorate** should be used in 2 per cent. solution to mitigate the pain. Leeches, and even paracentesis of the cornea, may have to be resorted to for the relief of the pain; hot applications are important, also—constitutionally, mercury, iodide of potassium, soda salicylate, and hygienic diet are necessary—using the drug necessary to combat the particular dyscrasia present.

REFERENCES.—¹"Amer. Journ. Med. Sci.," April, 1897; ²Ibid., Nov., 1896; ³"Med. Press and Circ.," May 13, 1896.

JOINTS. (See "Arthritis.")

KIDNEY (Detection of Stone in, by X Rays).

E. Hurry Fenwick, F.R.C.S.

In foreshadowing the probable value of the X Rays in the detection of renal calculus, the "Medical Annual" of 1896 (p. 628) pointed out that ultimate precision in renal radiography could hardly be expected, even when the method had been so far improved as to penetrate the thickness of the adult loin, because the ribs and spinal column cast confusing shadows upon the kidney area. The progress shown during the past year has proved that these fears were not groundless. We are now able with a twelve to sixteen inch spark to obtain a fair representation, *in thin people and children*, of the kidney, and in some instances unimpeachable evidence of renal calculus has been discovered, but with stout heavily-built adults failure most commonly results.

Plate X shows a stone in the radiographed kidney; it is published by White and Martin, but I have seen a much clearer and larger specimen radiographed by Mr. J. H. Montague, of 101, New Bond Street, the stone being subsequently removed by the lumbar route.

Dr. James Swain¹ records a very successful case in which stone in the kidney was distinctly visible on the radiographic plate, but unfortunately the negative was spoilt. Dr. Swain shows that the probability of detecting renal stones is greatest when the oxalate of lime calculus is encountered, for this substance casts the deepest shadow. Another important point which he raises is, that the penetrating power of the rays is increased by proximity to the object, and he further demonstrates the importance of a short exposure rather than a long one, for he has found the rays pass through the calculi after a time.

PLATE X.



Skiagraph showing calculus in the pelvis of the left kidney (White and Martin).

*The Roentgen Rays and the Fluoroscope as a means of detecting small, deeply-placed Stones in the exposed Kidney.*²—The real crux of renal surgery is encountered when we have to deal with a small prickly calculus imbedded in the end of a lengthy calyx of an undilated pelvis (*Fig. 57, C*). To detect such a stone and to remove it with but little damage to the delicate tissue of so vital an organ as the kidney is almost impossible with our present methods. The operator, moreover, is often haunted by the knowledge that certain forms of unilateral, non-somatic kidney disease (for instance, the granular kidney and the large white kidney), if locally inflamed or irritated by pyramid-chokage, simulate stone very closely; and if a diligent search is rewarded only by profuse hæmorrhage, he hastily concludes that his diagnosis of stone is faulty, and that he is dealing with a degenerated kidney—yet all the while some deeply-placed stone is the real cause of the symptoms.



Fig. 57.—Small calculus (C.) imbedded in calyx.

Nay, more, it is probably in the experience of most operators that after such a fruitless examination the patient has been so much relieved that he has returned to active life. For months, even years, he continues well, then he relapses, and as likely as not consults another surgeon who removes a stone from the kidney.

It might be said that chronic inflammation of the kidney can be recognized by microscopy of the urine. Not so. Many examples of unilateral inflammation of the kidney exhibit normal urine. Even *post-mortem* examinations may be quoted in which advanced disease of the kidney was discovered, and yet the examination of the urine, undertaken a few days before death, had shown that nothing abnormal could be found in the secretion. On the other hand, evidences of renal disease frequently appear in the urine of patients suffering from renal stone.

Have I overlooked a stone or have I explored an inflamed kidney? This is a question which I have sometimes found most difficult to answer after a negative exploration. I have removed stones from the kidney in thirty-four cases without mishap or death, and have, moreover, a tactile experience of over a hundred renal operations; and yet I feel convinced that I have overlooked small stones in probably six instances. If with one finger in the pelvis and another on the cortex, I cannot detect a stone; if the bougie passes along the ureter smoothly into the bladder; if the cystoscope demonstrates the vesical

orifice of the same ureter to be unimpeded, I conclude that my diagnosis of stone is wrong. Yet a more thorough cortical search might have revealed a stone. But a thorough search through the pelvis and cortex, even when conducted with gentleness, is fraught with present and future danger to the patient. I am certain from my own work that inflammatory changes consequent upon extended examination of the kidney take place in the gland, so that it often is subsequently crippled in its output, and is rendered very susceptible to suppression upon shock.

To try to obviate opening the kidney at all, when no stone is present, and to render an incision on to a located stone more precise, I have lately been working with the Roentgen rays from a 10-inch coil. These are thrown upon the exposed kidney (*Plate XI*), and the viscus is then examined with a fluoroscope screen. Although the method has marked disadvantages for routine operations, I believe it may be of occasional value to those surgeons who can command the rays in private or hospital practice. Personally, I should employ them when called upon to deal with a kidney which had been negatively explored before.

With a little education of the eye, any stone—oxalate, urate, or phosphate—can be detected in the kidney or its pelvis, if sufficient strength of X ray is employed and the screen is held near the organ.

Figs. A and B (Plate XII) represent the visual appearances of these three classes of calculus. The screen, which can be much improved, is of a kidney shape, so as to be easily adaptable to the edge of the loin. It was made for me by Mr. Montague, of New Bond Street, who has kindly helped me throughout the work.

The disadvantages of the method are as follows :—

(1.) The kidney must be brought on to the loin, and it is not every kidney that can be dislocated. In some the vessels are too short, in others the kidney is fixed high up under the ribs, and the operator may at once feel that free separation ought not to be risked. Women, of course, are easy subjects for renal dislocation; in fact, renal surgery in women bears no comparison, as regards difficulty, with that of men.

(2.) The operation room must be absolutely dark, and the initial steps of exposing the organ, of course, need a fair light.

(3.) The rays ought to be from a 10-inch coil, and concentrated upon the kidney, the tube being placed near the organ.

(4.) The screen used must be a good one, for there are many screens on the market which do not deserve the name of a fluoroscope. It should be made so that it can be rendered aseptic, and must be brought near the kidney.

PLATE XI.



Use of Roentgen Rays and Fluoroscope on exposed kidney.

In *Plate XI*, which is introduced to emphasize the fact that the kidney is exposed, the fluoroscope is, for the sake of clearness, placed too far off the kidney.

REFERENCES.—¹"Bristol Med.-Chir. Journ.," Mar., 1897; ²"Brit. Med. Journ.," Oct. 16, 1897.

KIDNEY (Surgery of).

E. Hurry Fenwick, F.R.C.S.

The following notes¹ of a consecutive series of a hundred operations on the kidney, performed by the writer, may be of interest :—

The gravity of operative interference.—The operative treatment of severe chronic renal disease presents probably an immediate fatality which is greater than that following any other branch of modern surgery.

Thornton, when comparing hepatic, peritoneal, and renal surgery, stated that he had had a death-rate of 7 per cent. in hepatic surgery, that this was higher than that following his operations for uterine tumours, and twice as high as that in his recent ovariectomies. In renal surgery, however, he remarked that he had a death-rate of 14·5 per cent. A death-rate, and a comparatively heavy one, must necessarily obtain when so vital an organ as the kidney is dealt with; even when all possible care is taken to prevent undue strain on the kidney, which has temporarily or permanently to do the work of the body. But there is no doubt in my mind that it will be considerably lowered when our diagnosis is more precise and our selection of cases which would honestly repay operation is more judicious. The percentage of deaths over a large series of operations of all kinds is largely made up of cases of malignant disease of the kidney and of inflammatory and tuberculous conditions of that organ. Thus in the first hundred patients upon whom I operated for the relief of renal disease I lost nine. They were distributed as follows :—

- (1) Nephrorrhaphy, eleven cases; no deaths.
- (2) Nephrotomy for exploration, ten cases; two deaths (one carcinoma, one shock).
- (3) Nephrotomy and drainage of an abscess, thirteen cases; one death (tuberculous).
- (4) Nephrotomy for septic suppression, three cases; three deaths.
- (5) Abortive nephrotomies, fifteen cases; one death (septicity).
- (6) Nephrolithotomy, thirty-three cases; no deaths.
- (7) Nephrectomy, twenty-two cases; two deaths (one carcinoma, one septicity).

Movable kidney.—There is a tendency to diagnose this condition too often in obscure kidney disease. Like the diagnosis of epidemic influenza and gout, it is made to cover a multitude of varied conditions.

For instance, a lady, troubled for some years by extreme frequency of micturition, occasional hæmorrhage and pain in the bladder, was discovered by her physician to have a movable right kidney. All the symptoms were laid to the account of this kidney, and the treatment consisted in supporting it. When the belt proved useless, the surgeon proposed to stitch it. I was then asked to examine, and found the movable kidney was merely an hypertrophied gland doing all the work of the body, and that the other was small but riddled with tuberculous abscesses. I nephrectomized the latter with success. But the physicians are not the only defaulters. If the surgeon, on nephrotomy, can find no stone or misses the stone he is in search of, the kidney is often carefully stitched to the wound, and if the patient is cured or relieved, the fixture of the organ has the benefit, and the case is recorded as nephorrhaphy. Probably one or two of my own cases may be so classed.

I submit that the kidney is often stitched unnecessarily, even harmfully. If nature arranges that our kidneys should move, we need not aim at their *absolute* fixation. Those of us who have had to follow exploratory renal operations done by others or by ourselves, know only too well how firm the adhesions are which a mere aseptic inflammation builds round the kidney. I suggest that all that is needed in movable kidney is to free the kidney from its surrounding fat, and in aggravated cases to free the outer capsule itself posteriorly and superiorly, and to drain for a few days. This is quite sufficient to set up tough surface adhesions and to fix the kidney. I was not altogether satisfied with my earlier results with anchorage by ligature, and have now relinquished all stitches through the kidney with the exception of those used to control violent hæmorrhage or to repair rents or gaps.

Surface Cysts of large size are not uncommon, and if single they point, in my limited experience, to blockage of the mouth of the calyx or papilla, and distension in the corresponding area of the kidney. The cyst merely needs peeling off, but the kidney pelvis in all cases should be thoroughly examined for stone.

I explored the kidney of a patient sent me by Dr. Kidd, of Dublin, in the hopes of finding a calculus. I came upon a large cyst the size of an orange at the top of the kidney. I peeled this off carefully—finding no channel of communication with the kidney cortex. I examined cursorily for renal calculus, and felt satisfied that the tension of the cyst was sufficient to account for her symptoms. This patient never lost her renal pain, and I subsequently explored the same kidney and discovered an oxalate stone in the commencement of the ureter.

PLATE XII.



Fig. A.—Radiograph of oxalate stone in substance of kidney.



Fig. B.—Radiograph of phosphatic and uratic stone in pelvis of kidney

Abscess of the Kidney.—This may result from primary renal causes or from septic inflammation ascending from the bladder. We will take the latter first.

Ascending Pyelitis.—As long as that reprehensible practice of routinely washing out every bladder that is irritable and every bladder that has evacuated a little pus in the urine irrespective of the cause and origin of that pus, as long as this holds favour with the profession, so long will cases of renal abscess exercise the attention and anxiety of the surgeon.

Washing out the bladder when it is the subject of chronic mucopurulent cystitis is quite another matter. This is sound treatment. When the urine stinks with ropy muco-pus, and especially when such decomposing secretion is the result of "residual" urine, irrigation is attended with the most beneficial results. No one who has seen the relief afforded by the procedure in such cases would be inclined to raise a protest against so valuable an agent if it were only reserved for such cases: certainly I should not. But washing out the bladder is not restricted to such cases. It is adopted by some upon the slightest appearance of pus in the urine, no matter whether the pus be in acid urine, or from tubercular surfaces; no matter whether the pus obviously emanates from the ureter or pelvis of the kidney. In some practitioners' eyes it is the signal for an energetic wash, and only too often is their interference followed by grave constitutional disturbance and the deterioration of one or both kidneys.*

It is lucky for us that usually one ureter is affected before the other, and that our interference with the bladder excites resentment in the kidney of that ureter which is so deteriorated. But only too often, after fifty years of age, when the ascending septicity attacks one kidney the other is constitutionally affected and a fatal result ensues. Sometimes the result of injudicious bladder interference, after fifty, is so rapid in its fatality as to allow no aid from the knife, but in most cases the invasion will be gradual, notably ascending tubercular pyelitis, ascending pyelitis of stricture and stone. In these cases a timely incision into the substance of the kidney relieves that organ of its collection of pus.

Unilateral Septic Suppression.—I am well aware that cases have been recorded in which the surgeon has successfully relieved suppression of urine by removing a calculus obstructing an ureter. I fear that if the pelvis has been infected from a septic bladder, previous

* Frequent allusion and details of cases in which damage has resulted may be found in the "Cardinal Symptoms of Urinary Disease," *et.c.*, p. 108.

to the impaction of the calculus, and the other kidney has been partially crippled from the same source, there is but little hope of success. We may rescue a patient with suppression due to unilateral calculous pyelitis with block, if the bladder has never been affected, even though the pelvis be inflamed and bathed in pus, but it is much more dangerous if pre-existing cystitis has occurred. I have had three cases, and they terminated fatally.

Abortive Nephrotomies.—I now approach with much caution and with some diffidence that very difficult subject of the mimicry of stone in the kidney. I have removed stones in thirty-five cases without mishap or fatality, but I have also examined some twenty-three cases, expecting stone and have found none. (Compare previous article on Radiography of the exposed kidney.) It would be interesting to know how many cases are annually explored by skilled operators in the expectation of discovering and removing a calculus—cases in which the classical symptoms of calculus have been present, but in which the surgeon has failed to discover the stone. Had we such a record of even a hundred cases, with an accurate and unbiassed account of the conditions found, there would be a truer knowledge obtained of those diseases which simulate renal stone, and fewer fruitless explorations done.

Speaking from my own experience, I found the cases drop easily into two divisions :—

- (1,) Those in which I could not find a stone which was present.
- (2,) Those in which I believe no stone existed.

I am aware that in six cases my patient left me still retaining the calculus which I had hoped to have removed. Two of the missed cases subsequently returned, and I removed from each a stone from the upper end of the ureter. The cases in which I believe other causes were present to account for the symptoms of calculus may be summarized as follows. A very small portion of these (four) had a movable kidney, and I fixed the organs with relief. The symptoms of calculus, therefore, were probably due to the mobility of the organ.

Two cases had evidence of back-pressure in the shape of a dilated pelvis, which forms what may be termed a "canoe"-shaped kidney. On searching about in one of these cases I felt the cystic and common bile duct packed with stones. I therefore opened the peritoneum and removed ten cubes, and the patient lost all her symptoms. One had a wrinkled loose capsule as if the organ was accustomed to swell hugely and then relax. Several had inflamed and dilated pelvises, the result of back-pressure due to the previous passage of calculi,

or the kinking of the ureter or the sagging down of the uterus upon that tube, or perhaps the rare attachment of the appendical adhesions. But in the remainder I have been struck with the hardness, smallness and density of the kidneys, their leathery consistence, their adhesion to their circum-renal fat, and the matting of that fat to the capsule. I have been struck with the fact that such kidneys are highly placed and can rarely be felt; they seem to retract below the ribs and become fixed. Now all these are evidences of interstitial inflammatory change, and may occur with healthy non-albuminous urine. We can understand how any sudden efflux of blood by vasomotor nerve change will cause the kidney to swell, and any tender patch within that tense resistant capsule to suffer. In rare instances the capsule gives and becomes detached and wrinkled, but in most it needs the incision along the convex border from top to tail to release the pressure.

To sum up: (1,) Stone in the kidney may be simulated by primary tubercle which is the arch-mimic, but which now-a-days can be detected with tolerable certainty, unless it be of the latent form.

(2,) Occasionally a movable kidney, by the kinkage of its ureter, may deceive the unwary. This is relieved by exciting adhesions.

(3,) Interstitial inflammation causing density of structure, causing adhesions to surrounding parts and retraction under the ribs, evokes a fixed renal pain, and generally during the attack frequency and difficulty of micturition. Section of the capsule relieves these cases.

(4,) A dilated pelvis, if inflamed, imitates stone in the kidney very closely. Nothing but drainage will permanently relieve this condition.

(5,) The propinquity of the gall bladder, the appendix and the colon, with their occasional tendency to provoke sympathetic spasm of the right ureter, may be considered last, as being the least common.

Limitations of Extirpation.—Wagner² states that it has been clearly shown that in case of congenital atrophy of a single kidney, the remaining organ undergoes a process of overgrowth enabling it to take the place of the absent organ. Although it has often been asserted that this also occurs when the organ is extirpated after partial or complete systemic development, there are now a sufficient number of cases which have been subjected to careful examination to prove that such a rule is subject to many exceptions, and that the remaining kidney is sometimes unable to take upon itself the functions of both.

Such a post-operative insufficiency often develops when least expected—that is, when there is every clinical evidence to show that

the remaining organ is healthy. The true basis of this insufficiency seems to depend upon a bilateral crippling. It has been proven that long-continued suppuration of one kidney, whether it be due to calculi or to other exciting causes, often leads to an undemonstrable chronic parenchymatous and amyloid degeneration of the other kidney, and hence to a suddenly developed insufficiency when the obviously diseased organ is removed.

Israel has also shown that even though the remaining organ be healthy, following operation, an ascending infection from the bladder is prone to develop.

In other cases, although the remaining kidney is healthy, there develops in it, following unilateral nephrectomy, a coagulation necrosis which destroys the secreting epithelium and shortly leads to insufficiency and death. The cause of this parenchymatous nephritis is said to depend upon the influence of narcotics and antiseptics, especially chloroform, carbolic acid and iodoform.

Exceptionally following nephrectomy fatal anuria develops, although macroscopic and microscopic examination of the remaining kidney show no pathological alterations. The inhibition of secretion is in this case probably reflex and of a similar nature to the anuria which develops in consequence of unilateral ureteral obstruction by a stone.

It is also obvious that in case of unilateral absence or shrinkage of the kidney, removal of a single secreting organ would be followed by anuria. The possibility of such a congenital deformity must always be considered before deciding upon extirpation of the kidney. Morris found from a study of over twenty thousand autopsies that this congenital malformation occurred once in three hundred and eighteen sections. Ballowitz has collected two hundred and thirteen cases of single kidney, and finds that in man the left kidney is generally absent; in woman the anomaly is frequent on both sides. It is about twice as frequent in men as in women.

The possibility of fusion of the kidney must also be considered, since operation under such circumstances is necessarily fatal unless the condition is recognized.

Socin and König have, however, operated on a horseshoe kidney, dividing the band of connection without serious hæmorrhage and removing the diseased portion. Braun under similar circumstances was deterred from completing his operation by uncontrollable venous hæmorrhage which was followed by death.

Practically the only method of recognizing abnormalities of formation or position of kidneys is by exploratory incision. All other diagnostic means are unsatisfactory. Even cystoscopy and catheter-

ization of the ureters may fail. This is especially the case in horseshoe kidney, since usually there are two ureters opening into the bladder in the normal position. In other cases of fusion double ureters are frequently observed. Indeed the ureters may be multiple.

Congenital absence of one kidney is commonly accompanied by absence of the ureter and of the corresponding portion of the vesical trigone, although this rule may have many exceptions. In women congenital absence of one kidney is often shown by unilateral abnormalities in development of the sexual system.

In addition to the dangers already mentioned which are attendant upon nephrectomy, it cannot be denied that when the organ is deeply placed and adherent to surrounding parts its removal is one of the most difficult and dangerous procedures known to modern surgery.

In the operations undertaken for the removal of malignant growth or tuberculous infiltration, cases should not be counted successful simply because the patient recovers from surgical interference. Even with a perfectly healthy, properly compensating kidney such a patient is more vulnerable than one provided with two kidneys. Autopsies have shown that more than one-half the cases of congenital absence of the kidney showed some disease of this organ, and the majority died because of such disease. Such kidneys are particularly subject to stone. The single kidney remaining after nephrectomy is even more vulnerable.

Schramm has reported a case in which he removed the kidney of a twenty-five-year-old woman because of hydronephrosis. Four years later she became pregnant, and up to the fifth month suffered from polyuria and albuminuria, and later there developed an irregular heart action. This patient recovered, although she was slow in convalescing. The author concludes that under such circumstances—*i.e.*, when one kidney has been removed—future conception should be prevented.

It is evident from what has preceded that a kidney which is functionally sound should never be sacrificed; the diseased kidney should only be removed when the nature of the disease and its extension are threatening. Kidney diseases which more conservative methods may cure, even though these require a long period of time, should not be subject to nephrectomy, since even a very small portion of secreting substance may be a vital necessity.

In the vast majority of kidney diseases nephrectomy can advantageously be substituted by nephrorrhaphy, nephrotomy, partial resection of the ureters, implantation of the ureters, or other procedures. Nephrorrhaphy is the operation for wandering or displaced kidney.

Nephrolithotomy should be employed in all cases of stone when the latter has not led to profuse suppuration and extensive destruction of kidney substance. Nephrotomy is sufficient in the majority of cases of kidney suppuration and of hydro- and pyonephrosis; also for the relief of solitary cysts of the kidney or of echinococci. Partial extirpation is indicated in the rare cases of non-malignant tumour, of suppuration, concrement or cyst formation. In the case of fistula, if the kidney is sound resection should be replaced by a plastic operation upon the ureter.

Nephrectomy may be primary or secondary. Primary nephrectomy is indicated in cases of malignant growth, either from the kidney itself or its capsule. The mortality in eight years has been extraordinarily diminished, probably because of increased skill in diagnosis and improved technique. Exceptionally, hæmaturia and pain will justify an exploratory operation through a unilateral or bilateral lumbar incision. Under such circumstances nephrectomy promises well. Very exceptionally repeated examinations of the urine show fragments of a tumour. Palpation of the kidney, if carefully conducted, sometimes will enable the surgeon to make an early diagnosis. Israel showed this in four cases, the accuracy of his diagnosis having been confirmed by operation. At the present time a tumour growing over the upper segment is practically inaccessible, and Rovsing states this is the region of the greater number of these tumours. Seventeen cases were collected by Wagner in 1893, in which the patients lived from one to six years without recurrence. Those who remained free from recurrence for two years may be regarded as cured, since later recurrence is unusual. There are exceptions to this rule, as in the case contributed by Rovsing, in which there was recurrence after three years.

An examination of over a hundred cases of nephrectomy for malignant growth shows that in the great majority of cases there is recurrence or metastasis within six months; that these accidents are progressively less frequent with the lapse of time, and with few exceptions are not observed at all after two years. As to the direct results of operation for malignant growth of the kidney, the mortality has been diminished from 61·22 to 24·40 per cent.

Cystoscopy in Lowering the Mortality of Nephrectomy.—Mr. Hurry Fenwick³ states that it is recognized that the high death-rate of nephrectomy is largely due to the ablation of kidneys, which have become affected by tubercle or by advanced malignant disease. When criticizing in 1890⁴ the influence of the Nitze method upon our knowledge and treatment of urinary disease, the author pointed out

how valuable the cystoscope would prove in helping to determine the presence and the working capacity of the kidneys, a point of permanent importance in cases in which nephrectomy is contemplated. An experience of a hundred completed operations of all kinds on the kidney sustains this contention. A judicious and skilful use of the instrument not only renders the surgery of the kidney more precise, but tends also to lower the death-rate, especially the high mortality of nephrectomy. In the hundred operative renal cases referred to by the author there were nine deaths; of these, four were *in extremis* at the time. There were twenty-one nephrectomies, with two deaths.

Cystoscopy as a first step in Nephrectomy.—No patient with tuberculous deposits in the epididymis or prostate or obvious malignant disease of the bladder should be examined. The author finds that the more the patients are cystoscoped in their own urine and the less the bladder is washed out, the better are the results.

Of course if there is blood or pus the bladder must be thoroughly washed out before the cystoscope can be used. In this case cystoscopy should not be undertaken unless the surgeon be allowed to operate coincidentally. The author never cystoscopes a case of obvious tubercle of the lower urinary tract.

Some renal cases which call ultimately for nephrectomy commence very insidiously, and evoke no symptoms beyond an occasional appearance of blood or pus in the urine. Thus tubercle and carcinoma of the kidney, which are the very diseases which swell the mortality of nephrectomy, may be almost symptomless at first, and that time, "the psychological moment," in which an operation would be of use, is frittered away in hesitation and in doubt. Cystoscopy permits detection of these cases in their early stages, if blood or pus has been passed.

Illustrative Cases.—*Calculous Pyonephrosis.*—Five stones were found in a left-sided pyonephrosis in a patient who had no guiding symptoms to the cause of his extreme malaise and evening temperature. His urine contained flakes of pus. On cystoscopy a thick white pipe of inspissated pus was seen, being forced out of the left ureteral orifice.



Fig. 58 —Left ureter seen in profile with cystoscope. A thick rope of pus extruded from orifice.

being forced out of the left ureteral orifice.

As it slid down the bladder wall it arranged itself in rolls, like the figures which treacle forms when dropped from a spoon (*Fig. 58.*)

Tubercle.—A lady, aged thirty-two, suffered from pyuria, frequency, pain, and blood. She had been diagnosed to have a movable right kidney, also a displacement of her uterus, for which she had been six months under a gynæcologist. The light revealed the left ureteral orifice to be patent and tuberculous (*Fig. 59.*) This was confirmed by finding the bacillus in the urine. The left kidney was removed. It was entirely transformed into tuberculous abscesses, with "dirt" stones.



Fig. 59. - Patulous infiltrated left ureteral orifice.

Early Malignant Growth.—A patient, aged fifty-nine, in whom papilloma of the bladder had been diagnosed, had symptomless hæmaturia of nine months' duration. On cystoscopy no papilloma was seen, but a jet of arterial blood poured from the right ureter. Then a clot (*Fig. 60.*) was forced out of the orifice as from a mould, and its exit was succeeded by another spurt of blood. The patient was turned on his side, and the right kidney removed. The growth occupied the middle of the gland (*Plate XIII, Fig. A.*)

The author was asked to cystoscope a patient aged seventy who had been bleeding two years. The hæmaturia was symptomless. Blood was seen issuing from the right ureter. The patient was promptly turned on his side, and the surgeon in charge of the case explored the kidney. Finding a healthy kidney he doubted the source of the hæmorrhage and closed the wound. The hæmorrhage never ceased, and a year afterwards a villous growth was discovered in the urine. As villous



Fig. 60. - Blood clot seen with cystoscope being forced from right ureteral orifice.

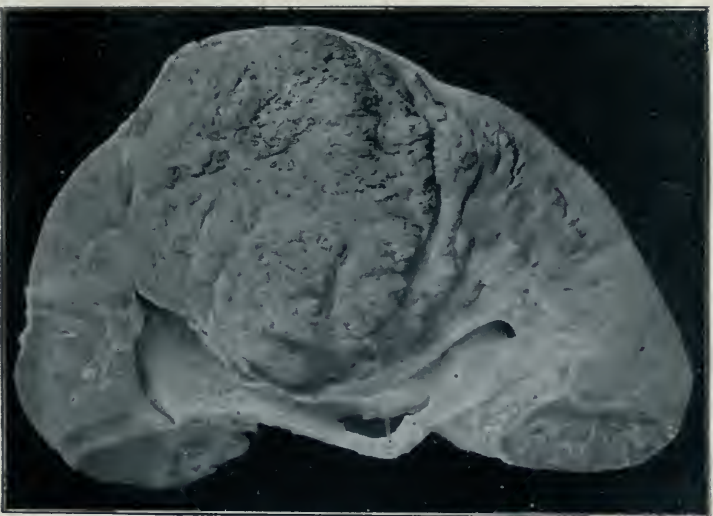


Fig. A.—Malignant growth of centre of right kidney.

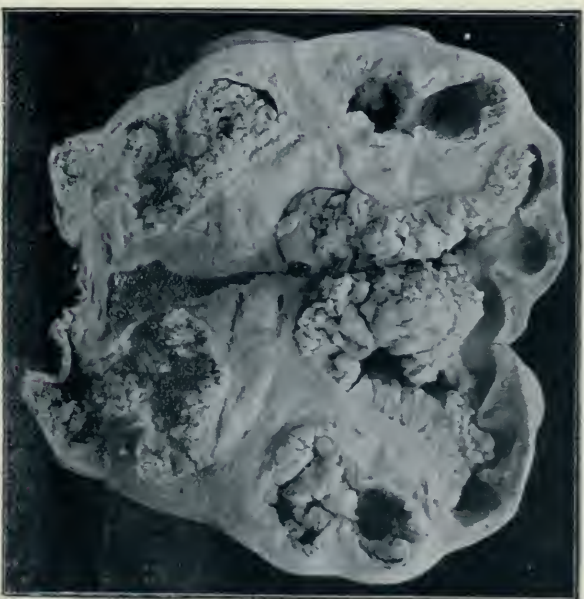


Fig. B.—Villous epithelioma of right kidney.

growth of the bladder is comparatively common and that of the kidney very rare (eight cases), the diagnosis of the source of the blood was viewed with even greater suspicion. Four years after the onset the author again saw the patient. He had not ceased bleeding for two years. His pallor was remarkable. Permission was obtained to nephrectomize. Again the cystoscope revealed the hæmorrhage issuing from the right ureter, and the patient was therefore turned over and the kidney removed. Its pelvis was filled with villous epitheliomatous growth; its cortex was honeycombed with cavities, and lined with the same growth (*Plate XIII, Fig. B*).

The author submits that all cases of profuse hæmaturia—either symptomless or accompanied by slight renal pain—should be judiciously examined with the cystoscope without delay, an operation on the kidney or bladder being permitted and carried out coincidentally with the cystoscopy.

All cases of severe symptomless pyelitis without implication of the lower urinary or genital tracts should be judiciously cystoscoped to demonstrate the presence and working capacity of the kidneys, and to locate the diseased kidney. In women, Kelly's method of catheterizing the ureters is probably a more certain form of exploration. When the kidney is not enlarged, as happens in such early stages, the lumbar incision is the better route for removal.

REFERENCES.—¹ "Trans. Brighton and Sussex Med. Soc.," 1897; ² "Centralbl. f. die Krank. der Harn- und Sexual-Organen," Bd. viii, Hft. 2, 1897; "Therap. Gaz.," April 15, 1897; ³ "Brit. Med. Journ.," Feb. 27, 1897; "Med. Soc. News," 1897; ⁴ "Brit. Med. Journ.," 1890, pt. ii, 894.

KNEE (Excision of).

Priestley Leech, M.D., F.R.C.S.

Lockwood¹ describes a new method of excision of the knee which he calls "Osteoplastic Excision."

The steps of the operation are as follows: The knee being bent at half a right angle, a transverse, or slightly curved, incision is carried across the centre of the ligamentum patellæ from one tuberosity of the femur to the other. The ligamentum patellæ is divided and the joint opened. The knee-joint having been freely opened and bent to a right angle, the extent of the disease is ascertained. The synovial membrane is removed with knife and scissors as carefully as if it were full of malignant disease. Sometimes to get at the upper part of the synovial membrane the ends of the transverse incision have had to be carried upwards. If any synovial membrane be left tubercle is likely to grow in it; it is also apt to inflame and secrete fluid, which may accumulate and become septic. In removing the synovial mem-

brane it is convenient to leave the part behind the condyles until the femur has been sawn. Healthy ligaments should be left, particularly the posterior crucial ligament, as this ligament prevents backward displacement. The articular surface of the patella is sawn off, and the cancellous tissue, if necessary, is gouged. The trochlear surface of the femur is sawn off leaving a flat surface on which the patella fits. The femur is next raised vertically by an assistant and the greater part of its articular surfaces taken away by two saw cuts



Fig. 61.

which begin at the convexity of the condyles, at the edge of the articular cartilage. These saw cuts are carried obliquely into the inter-condylar notch of the femur until they converge, entering the notch at the edge of the articular cartilage and below the attachments of the crucial ligaments (*vide Fig. 61*). In making these cuts the lower part of the attachment of the crucial ligaments cannot always be saved. The antero-posterior plane of these cuts should be at right angles to the axis of the femur. The articular cartilage, left in front and behind these cuts, is either torn off or removed with a gouge or sharp spoon. The tibia is treated in the same way as the femur. With a narrow saw two oblique cuts are carried upwards from the epiphysal line to converge at the base of the spinous process (*Fig. 62*). The articular cartilages can be removed without destroying the attachments of the crucial ligaments, and the lower attachments of both internal and external lateral ligaments need not be destroyed. The antero-posterior direction of the plane of these saw cuts is at right angles to the axis of the tibia; their obliquity should correspond to that of the sawn surfaces of the femur.



Fig. 62.

The advantages are as follows: Any lateral displacement of the tibia is impossible; the wedging prevents any rotation of the tibia upon the femur; large areas of sawn bone are brought into apposition with the smallest removal of either epiphysis. The operation is finished by sewing together the ligamentum patellæ with buried silk sutures and closing the wound. The limb is kept in Gant's splint for a month or six weeks and then it is put in a leather splint, and with a patten on the other foot the patient can walk with crutches and swing the

diseased leg. Mr. Lockwood has done the operation four times since 1889. In three cases the result was very good, and in the fourth case all the diseased synovial membrane was not removed and a recurrence took place.

Niehans² recommends the following incision in arthrotomy and arthrectomy, and excision of the knee-joint: A longitudinal incision beginning three to four inches above the patella is made on the inner side of the tendon of the rectus femoris; it goes through the vastus internus downwards, about half an inch from the edge of the patella, and curving somewhat at its lower end finishes at the tuberosity of the tibia. A second small incision is made at its lower end at right angles to it. By means of a broad chisel the tuberosity of the tibia along with the ligamentum patellæ is detached from the inner side and turned outwards, the outer edge of the tuberosity remaining attached to the periosteum. The whole of the joint is well exposed by this incision when the knee is flexed; the wound can be closed with catgut, and the bony flap may be held *in situ* with a nail which may be removed in ten to fourteen days, or if the quadriceps femoris is washed, a catgut suture may suffice. A similar incision on the outer side of the joint may be used in certain cases with equally good results.

REFERENCES.—¹ "Lancet," March 13, 1897. ² "Centralbl. f. Chir.," p. 457, 1897.

LABOUR.

Theophilus Parvin, M.D., Philadelphia.

Recent Tears of Cervix.—Stafford¹ advises, especially if there be retrodisplacement of the uterus, a cylinder tampon, the upper end of which, for about two inches, is saturated with a solution of equal parts of **Bovinine**, and **Boro-glyceride** and **Glycerin Mixture**, and the lower half with the last mixture only. He claims that the bovine is perfectly sterile, feeds the weak granulations, and hastens healing.

It is probable **Glutol** would be more efficient, and certainly more easily applied.—ED.

REFERENCE.—¹ "Cincinnati Lancet Clinic."

LABOUR (Disorders of). (See also "Abortion.")

Thomas More-Madden, M.D., F.R.C.S., Dublin.

Adherent Placenta.—Nyulasy¹ expresses the opinion that the only effective treatment of firmly adherent placenta is thorough **Curettement of the Uterus**.

In support of his view he quotes a recent observation of Professor Playfair's: "That such a procedure (curetting) is more thorough and complete than intra-uterine injection, and there can be no objection to it in hands tolerably expert in obstetric manipulations. It must, how-

ever, be only practised in exceptional cases and with great caution, since any roughness might seriously injure the uterine structures."

Prof. Lusk also at a recent meeting of the British Medical Association, said that he was not in favour of curetting. Personally, however, he employs it in every case of adherent placenta, believing it to be the only safe and scientific principle of treatment, and successful in proportion to the promptitude and thoroughness of its application.

The author replies to Prof. Lusk's recent statement that curetting may be followed by a rigor and rise of temperature, that the alternative treatment of intra-uterine douching is occasionally followed by exactly the same results; and, as Krönig observes, in the treatment of purulent endometritis, "clinical experience has taught us that washing out of the uterus brings no benefit."

After-Pains.—Dr. Winterburn² says that when pains are exhaustingly severe, he uses **Amyl Nitrite**. This potent drug is a very efficient controller of after-pains, and used with caution, it need not result harmfully. A neat way of using it is to saturate a small piece of tissue paper with 5 or 6 drops, stuff this into a 2-drachm vial, and request the patient to draw the cork and inhale the odour when she feels the pain coming on. It acts very quickly.

Irritability of the Bladder after Delivery.—Mr. W. E. Fothergill³ ("Manual of Midwifery") says the following is a useful prescription:—

R̄ Salol,		Infus. Buchu	q.s. ad ʒvj
Tinct. Hyoscyami	āā ʒj		

M. Sig.—A tablespoonful three times a day.

Organic Heart Disease in Labour.—In reviewing the subject Lea⁴ calls attention to the fact that the induction of labour is rarely successful in these cases. The patient frequently comes into premature labour spontaneously, and is readily delivered. During labour extraction of the child should be made very gradually, and the second stage of labour should be as short as possible. Care should be taken to keep pressure upon the abdomen to prevent the rapid fall in intra-abdominal pressure when the uterus is emptied. During the third stage of labour free hæmorrhage is beneficial, as tending to relieve the right side of the heart. When the heart fails at labour **Strychnin**, **Digitalls**, and **Nitrite of Amyl** are indicated.

Post-Partum Hæmorrhage.—Dr. Atthill⁵ advises the use of **Ergot** and **Strychnin** during pregnancy as a preventive of this accident whenever a history of confinements followed by hæmorrhage can be obtained. His conclusions are: (1,) That when administered previous to the termination of pregnancy in the case of women in whom a tendency to post-partum hæmorrhage is known to exist, it tends in a

marked manner to prevent the occurrence of hæmorrhage ; (2,) That when so administered in ordinary doses, it does not produce any injurious effect on either mother or child, and that its exhibition seems to delay the commencement of labour in such case ; (3,) It tends to make the involution of the uterus more perfect, and lessens the chance of the occurrence of subsequent uterine troubles, many of which depend for their cause on imperfect involution of that organ ; (4,) It will not bring on premature labour or induce abortion unless uterine action has previously been set going ; (5,) In cases of threatened abortion its administration frequently seems to act as a uterine tonic, and in some cases tends to avert the danger of a miscarriage, provided the ovum be not blighted ; (6,) That if the ovum be not blighted, and especially if it be detached, ergot usually hastens its expulsion.

Dr. Atthill quotes a case in which he employed this treatment with complete success, and in which five previous labours had been followed by alarming hæmorrhage. On the thirty-fifth week of utero-gestation he put the patient on the following mixture for three weeks :—

R. Inf. Ergotæ	ad ℥vi	Strychninæ	℥j
Ext. Ergotæ Liq.	℥iij		

A tablespoonful to be taken three times a day.

He then discontinued it for five days, when he directed it to be recommenced.

The following is a summary of Dr. Routh's⁶ paper, read before the British Medical Association, 1896, and of some of the views expressed in the subsequent debate :—

Hæmorrhage is called "secondary" when it occurs after the physician has thought it prudent to leave the case. It may be concealed or external. Its causes are sudden relaxation of the uterus from emotion or fright ; partial detachment of a piece of retained placenta ; detachment of thrombi by exertion, or sudden giving of ergot ; loosening a retained piece of placenta. Ergot given before the birth of the child to an exhausted patient causes irregular contraction of the uterus, with spasm of the contraction-ring, and the retention of clots. Blood would be retained, and severe internal hæmorrhage might follow. In such cases the treatment is to give ergot hypodermically, dilate the uterus with the hand, empty it, and secure contraction with bimanual manipulation. A hot douche at 118° F. was also advised. In severe external hæmorrhage before the third day the uterus should be explored for pieces of placenta. They should be loosened with the finger, removed, and the uterus packed with gauze. If needed, bougies or dilators must be employed to open the wound.

In discussion, Van Someren had succeeded in a desperate case by

compressing the abdominal aorta. Ritchie gave **Tincture of Nux Vomica** in large doses, and for some weeks before labour, where a hæmorrhagic tendency existed. The placenta and membranes were examined to see that nothing was left behind. He had used a **Crystal of Ammonia-Iron-Alum**, inserted into the os uteri, for bleeding, followed by **Hot Douches**. Byers had known a distended bladder to give rise to bleeding some days after delivery. Donald drew attention to a class of cases in which after a normal labour, on the eighth or ninth day, the patient was seized with a chill, rise of pulse and temperature, and hæmorrhage. This resulted from the absorption of fecal matter. **Calomel** and **Salines** caused a speedy cure. Williams had met two cases; one at the end of the first week, in which sudden bleeding occurred; it ceased, to return two or three days later. In one, a small piece of placenta was found, and in the other a small fibroid tumour lay loose in the uterine cavity. Bleeding stopped when they were removed. The hæmorrhage, however, was so severe that intravenous injections of salines was demanded. Kerr had seen such hæmorrhage in cases of backward displacement of the uterus. He did not think that rapid emptying of the uterus caused hæmorrhage, as it was not observed after Cæsarean section and precipitate labour. He thought that a too early resort to Credé's method of expelling the placenta had much to do with causing bleeding. The physician should wait until the placenta had become separated from its attachment to the uterus. Murdoch Cameron, in serious bleeding, trusted to **Tamponing** and **Uterine Massage**. He also had found benefit from the use of the curette and antiseptic douche. In conclusion, Routh had found rectal injection of several pints of saline solution very useful. He was glad that injections of iron had been entirely abandoned.

Stanmore Bishop⁷ maintains that from first to last, in every case, whether complicated by retained placental fragments, torn cervix, or any other condition, the only measure of primary importance in the treatment of post-partum hæmorrhage is **Compression of the Aorta**.

Schæffer⁸ argues that absorbent gauze is a bad plug for the bleeding uterus, as in the event of its failure to stimulate uterine contraction it frequently acts as a capillary drain and increases the mischief. He now uses **Non-absorbent Gauze**, prepared by impregnating it with gutta-percha. It can be mixed with iodoform or airol. By rolling it up into a ball it can be passed into the uterus, which it distends without absorbing any more blood. As a tampon the gutta-percha gauze retains its elasticity.

Turpentine⁹ is a prompt and efficient remedy. A piece of lint saturated therewith should be carried directly into the uterus so as to

bring it into contact with the inner surface. In cases where the patient was almost pulseless it seemed to act as a stimulant, but it never failed to instantly check hæmorrhage and produce contraction.

Placenta Prævia.—Nyhoff¹⁰ (Amsterdam) suggests that if in the first stage of labour the finger be pushed first through the placenta and swept round so as to detach the amnion, the placenta can retract with the uterine wall and so avoid bleeding, while the amniotic sac will protrude into the opening and imitate the mechanism of normal labour as closely as possible. If the manœuvre fail recourse may be had to turning or the other methods.

Heil¹¹ describes the practice now adopted at the Heidelberg Maternity in dealing with placenta prævia. The membranes are first ruptured so as to bring down the head. When dilatation is complete there is no doubt what ought to be done. But if the os remains narrow, and in cases where the hæmorrhage begins before labour, antiseptic plugging of the vagina and cervix is indicated.

Posture in Labour.—Fothergill¹² remarks that the Walcher position in labour has become a routine procedure in many German hospitals, and that experience has proved that an increase of 1 c.m. in the true conjugate diameter is thereby obtained. The patient is placed in the lithotomy posture and the legs are then allowed to hang freely down. It is necessary to have the buttocks quite at the edge of the bed or table used, and if the bed is too low, pillows must be placed under the buttocks so as to raise the body of the patient until the feet hang clear of the floor. There is a tendency to pull the patient off the bed; but she may be held by the anæsthetist, or bands may be passed under her arms and fastened to the bed or table legs.

An advantage is that no assistant is needed to support the legs. In this posture the axis of the pelvic brim presents downwards at an angle of about 40 degrees; therefore, in order to exert traction in the proper direction with forceps, the operator should sit on a low stool.

In high forceps cases, and after perforation, the position saves (1,) The strength of the operator; (2,) Pressure on the head; (3,) Pressure on the symphysis; (4,) Pressure on the perineum by forceps. In cases of difficulty at the brim not needing forceps, and in breech cases, the position saves (1,) Exertion to the uterus and abdominal muscles; (2,) Pressure on the head; (3,) Pressure on the pubic symphysis. In all cases, with or without forceps, where the perineum is in danger, extension of the legs at the hips is of advantage in relaxing the integument and subjacent structures at the vulvar orifice.

Mensinger¹³ performs version with the patient in the prone position, claiming as the advantages of the method that the outlet of the pelvis

is directed above, giving the operator much more room for the insertion of the hand ; the operator's hand and arm are in the position of pronation, giving a better use of the muscles and tactile sense ; this posture widens and opens the uterus and vagina ; the risk of bruising the soft parts is less, and the dangers of tearing the uterus from the vagina, and of air embolism are minimized.

Puerperal Septicæmia.—Dr. Jewett¹⁴ submits the following conclusions : (1,) There is no clinical proof that puerperal infection can occur from normal vaginal secretions ; (2,) All childbed infection in women previously healthy is by contact ; (3,) Prophylactic vaginal disinfection as a routine measure is unnecessary, and even in skilled hands is probably injurious. Its general adoption in private practice could scarcely fail to be mischievous ; (4,) In healthy puerperæ, delivered aseptically, post-partum douching is also contra-indicated.

These rules must hold good in the simpler cases of manual or instrumental interference in which the uterus is not invaded.

A purulent vaginal secretion exposes the woman to puerperal infection. In the presence of such discharges at the beginning of labour the vagina should be rendered as nearly sterile as possible. Concentrated antiseptic solutions should not be used, the process being conducted with the least possible mechanical injury to the mucous surfaces.

In case of highly infectious secretions, the preliminary disinfection should be followed by douching at intervals of two or three hours during the labour.

Sterilized Glycerin, or other suitable material, may be used to restore the proper lubrication of the birth canal.

The safest and most efficient means for correcting vicious secretions is a **Mild Antiseptic Douche** repeated once or more daily for several days during the last weeks of pregnancy. It is the duty of the obstetrician to know before labour the amount and character of the vaginal discharge.

Clinically, the amount of the discharge, its gross appearance, and that of the mucous and adjacent cutaneous surfaces, usually furnish a sufficient guide to the treatment.

Probable unclean contact within twenty-four to forty-eight hours is an indication for prophylactic disinfection.

Byers¹⁵ calls attention to the necessity of treating anæmia or hydræmia in the pregnant woman. He believes that under antiseptic precautions the pulse and temperature only vary slightly from the normal subsequent to labour. Rapid pulse and fever should excite suspicion, although the milk and lochia may not be arrested at first, and no abdominal tenderness present. Tonsillitis, appendicitis, influ-

enza, rheumatism, phthisis, old pelvic abscesses and suppurating ovarian tumours are mentioned as causes of quick pulse and high temperature after delivery apart from septicæmia.

The earlier after labour that symptoms of infection appear the worse is the prognosis. Locally we may adopt : (1,) Simple irrigation ; (2,) Continuous irrigation ; (3,) Curettage.

(1,) Normal endometrium with no breaking down tissue calls for this measure. The gravitation douche is preferable and the intra-uterine tube should be large in order to thoroughly flush the cavity : this procedure is best carried out if the cervix is steadied with a volsella. A 1 in 4000 **Corrosive Sublimate Solution** is selected, unless the patient has renal disease or has suffered from post-partum hæmorrhage, when **Creolin, Lysol or Iodine** may be substituted ; but these if strong may act deleteriously on tissues already debilitated ; 8 to 10 pints of fluid should be used for the douche, and the temperature should be 100° to 105° F. to obtain a stimulant effect.

(2,) Should the temperature be unaffected by the foregoing, then continuous irrigation is advocated. Professor Pinard, of Paris, strongly supports this method, especially if the temperature remains high on the evening of the third day. He also considers that it favourably influences the after use of the curette, should that be required. **Weak Carbolic, Lysol or Boric Lotions** are used for continued irrigation, which may be maintained for twelve hours or more, and following this the inner surface of the uterus may be painted with undiluted **Tincture of Iodine**.

(3,) The use of the **Curette** is called for in the earliest stage should any decomposing tissue be detected in the uterine cavity, and the cervix be markedly patulous, or should fœtor persist after douching the vagina. As a rule it is better to employ irrigation before resorting to curettage, and the latter measure may be advantageously carried out on the fourth day of the attack, when necrosed endometrium will be beginning to separate. Early curettage—should the morbid process be purely local—may open up fresh channels through which infection may spread.

In the event of hæmorrhage after curettage the uterus may be packed with **Iodoform Gauze** for twenty-four hours, after which it is removed and the curette re-applied, should the temperature have remained unaffected.

Dr. J. D. Williams¹⁶ useful paper on the value of **Antistreptococcic Serum** gives the following directions for its use :—

Mode of Administration.—The serum was administered by subcutaneous injection into the areolar tissue of the abdominal wall ; to avoid

septic troubles, it was deemed essential to purify the skin as well as the syringe. In the cases quoted these precautions were carried out as follows: The skin was washed with Johnston's antiseptic ethereal solution of soap, and then for two minutes with perchloride of mercury lotion, 1 in 1,000, and finally dusted with boracic acid powder. The syringe used was Debove's, of the capacity of 10 c.cm. It was taken to pieces and placed in a pie dish, which was boiled in a clean saucepan for fifteen minutes at the patient's home. Ten c.cm. were injected into each puncture, three such punctures being made for a dose of 30 c.cm. In no instance was there local trouble.

Dosage.—The question of a maximal dose beyond which it is unsafe to go has not yet been settled, nor indeed are supplies of serum derived from different sources or from the same source at different times guaranteed to be of the same uniform strength. In the interests of clinicians it is desirable that a uniform system of standardizing should be adopted by bacteriologists, and when this is accomplished, clinical observers will be better able to agree as to what the maximal and submaximal doses should be. At present the practitioner has to rely for guidance upon the instructions which accompany each supply, and these vary with their source. The largest dose the author injected was 35 c.cm.; Kennedy injected 45 c.cm. The serum used in each case was Ruffer's. Better results were found after a large than after a small initial dose. Experience encourages the use of a maximal initial dose, to be followed, if necessary, by smaller doses at intervals of twelve or twenty-four hours. The British Institute of Preventive Medicine fixes the initial dose at 20 c.cm. followed by another 20 c.cm., if the temperature has not fallen. Bulloch states that much larger doses can be given with safety; 10 c.cm. of his serum injected into rabbits cause no bad symptom.

What Cases are suitable.—Puerperal infection may be independent of streptococci. According to Bulloch recent research shows that a puerperal fever may be set up by the gonococcus (Krönig), the bacillus coli communis (Marmorek) the Talamon-Fraenkel coccus, and the staphylococcus. In the majority of instances, however, puerperal fever means infection of the genital canal, and ultimately of the whole system, with the streptococcus pyogenes. There is produced a septicæmia—using the term in the sense in which it was originally employed by Koch—namely, a condition of microbic blood infection where the microbes multiply in the blood, and cause a rapid fatal disease. The microbe at work most commonly is the streptococcus pyogenes, and the type of infection or septicæmia induced, is called puerperal strepto-infection or strepto-septicæmia, or in the language

of the bacteriologist, strepto-mycosis. It is in this class of cases only that the antistreptococcic serum is of value; the serum is specific against the streptococcus only, and attempts to cure staphylo-septicæmia or infection caused by any other germ, will not be successful. The combination of symptoms found in cases of severe puerperal septicæmia point to a strepto-infection, but in the absence of a bacteriological examination one cannot be certain. The strepto-infection is at first essentially a local disease: it is later that it becomes a blood infection. Therefore local treatment, antiseptic douches, and curettage cannot be dispensed with, but must be carried out in conjunction with the serum which comes into play, when the germs have passed into the general circulation, by annulling their action and toxin, and obviating the organic degenerations which are beyond our control. Vinay believes the injections to be more effective and more immediate in their action when they are made early, and at the time of the evening when there is a spontaneous rise in the temperature.

Rupture of Uterus.—Ross,¹⁷ of Toronto, describes a unique procedure for treatment of a rupture of the uterus. It consists in opening the abdomen and washing out all blood from the abdominal cavity, passing up a pair of forceps through the vagina and on through the rent, seizing a rope of iodoform gauze and drawing it down through the laceration and out through the vaginal canal. The upper end is cut off level with the peritoneal surface of the uterus. He employed it successfully in one case of rupture following miscarriage at the fourth month, and in two cases with rupture of a pregnant uterus at full term.

Uterine Tetany.—Müller¹⁸ recommends the following formula:—

R̄ Tincture of Iodine 1 part | Alcohol 2 parts

M. Five drops to be taken every half hour in tetanic contraction of the uterus during labour.

REFERENCES.—¹“Therap. Gaz.,” Sept. 15, 1896; “Intercol. Med. Journ. Austral.,” March 20, 1896; “Therap. Gaz.,” Feb. 15, 1897; ²“Med. Rec.,” Dec. 5, 1896, and “Journ. of Obstet.,” ³*Ibid.*, March 13, 1897; ⁴“Chronicle,” Oct. 1896; ⁵“Brit. Med. Journ.,” March 6, 1897; ⁶“Amer. Journ. Med. Sci.,” Dec. 1896; ⁷“Lancet,” Oct. 31, 1896; ⁸“Brit. Med. Journ.” Epit., Jan. 23, 1897; ⁹“Med. Age,” Aug. 25, 1896; ¹⁰“Scottish Med. and Surg. Journ.,” June, 1897; ¹¹“L’Obstetrique,” Jan. 15, 1897; ¹²“Brit. Med. Journ.,” Oct. 31, 1896; ¹³“Centralbl. fur Gyn.,” No. 23, 1896; ¹⁴“Therap. Gaz.,” Sept. 15, 1896; ¹⁵“Brit. Med. Journ.,” Oct. 24, 1896; ¹⁶*Ibid.*, Oct. 31, 1896; ¹⁷“Amer. Med. and Surg. Bulletin,” Oct. 3, 1896; ¹⁸“New York Med. Journ.,” Oct. 24, 1896.

LABOUR (Use of Ergot in). *Thomas More-Madden, M.D., Dublin.*

As will be seen, I ascribe a far wider range of utility to **Ergot** in midwifery practice than that which is generally recognized at the present time. The conditions and circumstances under which the drug may be employed are, as I believe, very numerous. Nevertheless, I would presume to observe that my views on this point are the result of actual clinical experience which it may not be easy to disprove by any merely theoretical objections, however strongly expressed.

Judging from the recent literature of the subject it apparently is not superfluous to reiterate that to use any of the preparations of ergot safely and efficiently in the labour cases referred to it is essential : (1,) That the presentation should be natural or cranial, except in some exceptional instances of breech presentation, wherein inertia must be dealt with ; (2,) That there should be no disproportion between the fœtus and mother, nor any other physical obstacle to delivery in the genital tract ; (3,) That the os uteri, if not previously fully dilated, should be sufficiently dilatable to allow of speedy delivery by the forceps, whenever that is necessary ; (4,) That the preparation of ergot selected, the dose in which it is given, and the method in which it is employed, should be well calculated to secure the desired effect.

Subject then to the foregoing conditions ergot may with utility be employed before, during, and after the second stage of labour—that is to say, it can be thus given before the full dilatation of a dilatable os, in some instances of long delay from inertia of the uterus, in which there is either : (*a*,) Evident danger to mother or child, or (*b*,) risk of subsequent hæmorrhage from further protraction of the case. In the second stage it may be employed (*c*,) in all cases of labour rendered abnormally tedious by defective uterine action, in which the presentation is natural and no other impediment to delivery existent ; or (*d*,) for the prophylaxis of apparently impending hæmorrhage. During the third stage ergot may be resorted to (*e*,) for the expulsion of a placenta retained by inertia ; or (*f*,) for the arrest of excessive loss of blood. After labour this ecboic may be exhibited either immediately (*g*,) to check or prevent flooding, or subsequently (*h*,) to produce such tonic or permanent contraction as will seal up the uterine vessels and so lessen the liability of bacteriological invasion or sepsis ; or (*i*,) for the purpose of expelling clots and so arresting after-pains. Lastly (*j*,) in the majority of multiparous patients ergot can with advantage be given during the puerperal state with the object of stimulating the muscular contractibility of the uterus, and thus aiding the process of involution.

Ergot in the Prevention and Treatment of After-Pains.—Many

years ago, on the suggestion of the late Dr. T. Beatty, ergot was largely employed in the Dublin School of Midwifery for the prophylaxis, and in the treatment of after-pains. From experience I can bear the strongest testimony to the value of that now generally forgotten method of arresting this trouble. In such cases the ergot or ergotin may be employed in a similar manner and dose, as in instances of delay from uterine inertia in the second stage of labour, or in those of *post-partum* hæmorrhage. In the former cases the ergot probably acts, as conjectured, by causing a perfect and permanent contraction of the muscular fibre of the uterus, and so preventing the formation within its cavity of those clots by which the spasmodic action is stimulated in cases of after-pains.

Method of Employing Ergot in Obstetric Cases.—The dose of ergot to be given must, of course, depend on the particular circumstances of the case, as well as the preparation selected in each instance. At the same time I may observe that in whatever form ergot may be resorted to as an ecbolic in any suitable cases of delay from uterine inertia in the latter stages of labour, or for the prevention or arrest of subsequent hæmorrhage, it should be always administered in a dose sufficiently large to secure prompt, active, and permanent uterine contraction. And, secondly, that under no circumstance should this drug be given in midwifery practice in those small, utterly inefficient and repeated doses which are now recommended by some writers, and which, in my opinion, are calculated, by producing irregular and evanescent waves of muscular contractibility, to do more harm than any possible good.

With regard to the most suitable preparation of ergot for obstetric use there have been almost as many different opinions as writers on the subject. In my early days an extemporaneous infusion of the freshly-powdered drug was most generally employed, and, though troublesome to prepare and nauseous to take, was of unquestionable ecbolic activity. This in turn was replaced by the more palatable and equally effective officinal liquor ergotæ of the British Pharmacopœia, or by a glycerine solution such as Long's, which, twenty-five years ago, was as largely and efficaciously employed as any of the later preparations. To the value of some of these, and more especially of Bonjean's ergotin, Burroughs and Wellcome's tabloids of ergotin or its citrate, and Oppenheimer's ergol, I can speak from experience of their use in many instances. At the same time, however, I must confess my possibly antiquated predilection for the freshly prepared liquid extract of the Pharmacopœia. This, in the cases mentioned, during or immediately after labour, I have generally employed in doses of from 2 to 3 drachms by the mouth, together with 1 drachm, or frequently 2 if

necessary—at the same time—by deep hypodermic injection in the gluteal region.

In the treatment of after-pains, or to secure such firm and permanent uterine contraction after delivery as may aid in safeguarding the patient against either puerperal sepsis, or subsequent sub-involution, I have generally found drachm doses of liquor ergotæ, given thrice daily in combination with **Tincture of Nux Vomica** and **Citrate of Iron and Quinine** most serviceable. To act thus efficiently and safely in any of the instances that have been here referred to, ergot, like all other active drugs, should be given only in suitable cases and conditions at the proper time, in efficient doses, and with due precautions.

REFERENCE.—“Dublin Journ. of Med. Sci.,” Sept., 1897.

LACHRYMAL GLAND (Diseases of).

William Oliver Moore, M.D., New York.

Browr,¹ in a discussion on *Dacryocystitis*, said that the only treatment worth considering must comprehend the pathology of the disease, and aim at restoring the parts to their natural state. The *canaliculi* are capillary tubes, and what had for good reasons been made small it was a mistake to enlarge. He therefore used *small probes*, and did not over-distend the lachrymal duct at any point.

Stricture was not a primary cause of obstruction, but the result of inflammation of the duct, due to *bacterial infection* of the lining membrane, and the vascular structures surrounding it. His treatment by *irrigation* had stood the test of years. The *style* he used only for exceptional cases, where the structures were distorted from long-continued inflammation.

Veasy² in *dacryocystitis* uses a solution of **Formaldehyde**, 1 to 1000, first washing out the canal with this solution, immediately followed by a sterilized astringent solution, such as **Zinc** or **Aluminium Sulphate**.

Miller,³ of Moorfields, London, is in the habit of treating all *organic strictures* of the lachrymal duct, by means of styles, in most cases permanently retained. The platinum style of gauge 25 wire is used, each case being specially fitted; it consists of a vertical stem, with a short arm bent at or about a right angle to the stem. Usually this arm is made double by recurving the wire back to the stem, so that the arm consists of two thicknesses of wire, parallel and quite close together; in this way the slit in the canaliculus is just filled, with no metal visible unless the lid is everted. The tubular styles of the shops are useless, becoming choked with dust and mucus. The shape of the stem should be somewhat concave outwards. In *lachrymal abscess* a style should be used for a time at least, and in most cases it is needed

permanently. Change of shape may be necessary to suit the changing size and shape of the lid and canthus.

Ridley⁴ strikes the keynote when he says at the first complaint of troublesome *epiphora* we do not slit up the canaliculus and pass a probe as formerly, neither do we attempt to pass a fine probe down the undilated passages for diagnostic purposes. It is sufficient in the earlier stages of the affection to merely dilate the puncta and syringe out the lachrymal sac at frequent intervals with an antiseptic solution.

He also advocates in patients living at a distance the use of a leaden style, instead of probing, although as a rule he would not use it owing to ulceration of the mucous membrane.

[We are in favour of the treatment of the naso-pharynx first, and then if not relieved, the tear passages may first be treated by irrigation, and finally by the slitting of the lower canaliculus and the introduction of a lead style, which should be left in position from four to six weeks, and then removed. Our experience is that this treatment is far superior to the old way of probing, and far less painful. We have no sympathy with the treatment by large probes; they are unscientific and brutal.

It is well after the removal of the lead or silver style to irrigate the lachrymal duct by means of a solution of **Chloral Hydrate** or **Hydrastis**; this continued for a few weeks will put the patient in good condition, and in many cases where the treatment is carefully adhered to a complete cure is effected.—ED.]

REFERENCES.—¹"Brit. Med. Journ.," March 20, 1897; ²"Phil. Polyclin.," Oct. 1896; ³"Brit. Med. Journ.," March 13, 1897; ⁴"Clin. Journ.," March 24, 1897.

LACTATION. (See also "Puerperal State.")

Henry Dwight Chapin, M.D., New York.

Drs. V. Adriance and J. S. Adriance¹ make a clinical report on the chemical examination of two hundred cases of human breast milk. Normal human breast milk can be represented by figures included between certain extremes, thus :—

Fat.	Carbohydrate.	Proteids.	Salts.	Total solids.	Water.
3-4	6-7	1-2	·20	12	88 per cent.

A review of the analyses leads to the following conclusions: The fat shows no constant changes during lactation. Its most marked characteristic is its variability. The carbohydrate on the second day of lactation is low, but rises rapidly during the first few days. This increase continues, but less rapidly, up to the end of lactation. The proteids pursue a course the reverse of the carbohydrate. The salts diminish similarly to the proteids. The total solids are represented

by 12·20 per cent., till the later months of lactation, when they decrease steadily. The colostrum period has low carbohydrate, with a tendency to increase rapidly, and high proteids and salts, with a tendency to decrease rapidly. The milk of the later months of lactation shows a deficiency in proteids, ash, and total solids.

To secure a healthy milk, the mother should have: (1,) A good constitution; (2,) Healthy environment; (3,) Simple, nutritious diet, with enough albuminous food; (4,) Regular exercise in the open air.

The authors reach the following conclusions in reference to breast milk: Excessive fats or proteids may cause gastro-intestinal symptoms in the nursing infant. Excessive fats may be reduced by diminishing the nitrogenous elements in the mother's diet. Excessive proteids may be reduced by the proper amount of exercise. Excessive proteids are especially apt to cause gastro-intestinal symptoms during the colostrum period. The proteids, being higher during the colostrum period of premature confinement, present dangers to the untimely-born infant. Deterioration in human milk is marked by a reduction in the proteids and total solids, or in the proteids alone. This deterioration takes place normally during the later months of lactation, and unless proper additions are made to the infant's diet, is accompanied by a loss of weight, or a gain below the normal standard. When this deterioration occurs earlier, it may be the forerunner of the cessation of lactation, or well-directed treatment may improve the condition of the milk.

Dr. J. K. Barton² having devoted special attention to **Sterilized Milk**, makes the following positive statements :—

(1.) Completely sterilized milk, if administered without any fresh food, will undoubtedly sooner or later produce scurvy.

(2.) Comparatively or temporarily sterilized milk may be administered for any length of time without fear of scurvy appearing.

(3.) Completely sterilized milk, if administered at once in perfectly clean bottles, spoons, or cups, can be relied upon as free from any pathogenic bacteria.

(4.) The heating of milk alters very slightly, if at all, its nourishing qualities.

(5.) All kinds of sterilized milk, if free from added chemicals, can become foul as quickly, if not quicker, than ordinary fresh milk.

(6.) All sterilized milk that is put into hermetically sealed vessels, and which can keep fresh in them for several or many days, will produce scurvy unless some fresh food is administered daily; one meal of fresh whey daily will achieve this in younger infants than those who may have fresh vegetables, meat, or fruit.

(7.) Milk that is raised to the boiling point, or better, to within two degrees of the boiling point, and maintained there five to fifteen minutes, is "comparatively" sterilized, and will never produce scurvy, and is almost quite safe from pathogenic organisms.

To sum up, if you would steer clear of scurvy and avoid pathogenic microbes, then obtain as clean fresh cow's milk as possible twice a day in winter, three times a day in summer, and scald it soon after its receipt, of course every precaution being taken to prevent contamination of the scalded milk between the time of its sterilization and administration.

Dr. R. C. Newton³ enters a criticism upon the production of **Modified Milk** and of modern dairy methods in general.

His conclusions are as follows :—

(1.) Some occult but irreparable injury occurs to milk commensurate with the lapse of time since the milking and the amount of agitation to which it is subjected.

(2.) While this change is delayed and modified by cleanliness and modern dairy methods, especially by a continuous low temperature, it can not be prevented.

(3.) Therefore, milk should be fed to infants as soon after milking as possible, and should receive the minimum of agitation.

(4.) The modern high-grade cow is a specially developed milk machine, and is consequently very liable to disease, and is remarkably sensitive to changes of diet, water, shelter and treatment.

(5.) It is by no means settled that for the production of infants' food, the ass or the mare, or even the goat, might not be superior to the cow.

(6.) The modern cow is especially liable to tuberculosis, and this liability increases in geometrical progression with the number of cows kept in one stable and the number of hours in the twenty-four during which they are housed.

(7.) With our present knowledge the conclusion is inevitable that all cows' milk intended for any form of human food should be Pasteurized and aerated immediately after milking, and then kept at a uniform temperature of about 40°F.

(8.) The spread of tuberculosis among cattle can be greatly modified, if not prevented, by, first, separating them into very small herds—say, for instance, into squads of six—which can be fed, milked and cared for by one man ; and second, by keeping the cattle out of doors just as many hours as possible during the twenty-four ; and third, by sterilizing all the milk which is fed to the calves ; and fourth, by keeping the latter away from other cattle and from all sources of infection.

(9.) To ensure healthy cattle, they should be housed during the winter in high, dry stables into which the sun's rays penetrate all day long.

Dr. Chas. G. Kerley⁴ considers the uses and limitations of **Condensed Milk** in the feeding of infants. Notwithstanding its many disadvantages, we are often compelled to use it. We must supply the deficient amounts of fat and proteids. If the parents of the patient are well-to do, cream may be added in proper proportion to make up the requisite amount of fat. Among poor people, cod-liver oil may supply the deficiency. The proteids may be increased by adding the condensed milk to a meat broth: 1 lb. of lean beef is boiled in 1 quart of water until the liquid is reduced to 1 pint. This broth contains 0·8 of 1 per cent. of proteids. If 1 part of condensed milk is added to 12 of broth, the proportion will answer for an infant of three months.

Dr. Schwartz⁵ advises unboiled **Goat's Milk** as a food for children. Goats being more immune to tuberculosis, and more selective in their food than cows, the boiling of their milk is unnecessary. It very closely resembles human milk.

REFERENCES.—¹"Arch. Ped.," vol. xiv, Nos. 1 & 2, 1897; ²"Brit. Med. Journ.," Jan. 2, 1897; ³"Trans. Med. Soc. of N. J.," June 22, 1897; ⁴"Med. News," vol. lxx, No. 23, 1897; ⁵"Deut. med. Woch.," No. 40, 1896.

LARYNX (Diseases of).

R. Lake, F.R.C.S.

Hæmorrhagic Laryngitis.—Compaired¹ reports an interesting case of a young girl who suffered with aphonia and hæmoptysis. The mucosæ of the larynx and pharynx were covered with confluent hæmorrhagic spots, which were also present on the cords. He used a spray of **Antipyrin** 6 per cent., and **Cocain** 1 per cent., with **Tannin** internally.

Langmaid² writing on a variety of this affection, "Submucous Hæmorrhage of the Vocal Cords," reports five cases. In all, the hæmorrhage appeared at the junction of the middle and anterior thirds, and was due to vocal strain; four were on the right cord and one on the left. He advises absolute vocal rest and topical application of astringents.

Perichondritis.—This is practically invariably due to either syphilis tubercle, or acute exanthemata, or malignant disease, though several cases of apparently idiopathic perichondritis of the larynx are recorded. Still they must always be received with a certain amount of reservation, as time alone can prove them so.

C. W. Richardson³ reports such a case in which a severe suppurative perichondritis occurred in a man of twenty-four, the abscess which

formed exposing in its interior the whole left ala of the thyroid cartilage, the patient making a good recovery. There was a family history of tubercle, which in itself should make one decidedly careful before pronouncing the disease idiopathic, the reporter being divided as to his opinion of its origin between trauma and tubercle.

Cancer of Larynx.—H. R. Richardson⁴ relates a case in which papilloma of the larynx recurred as an epithelioma, and quotes the opinion of Gerhardt, who says Semon has proved that cancerous degeneration of originally benign tumours happens seldom and without any one's fault. The writer performed a laryngotomy on a patient who had had quite innocent, but constantly recurring papillomata for four years, and he was and is inclined to the theory that it is either coincidence, viz., the liability to epithelial overgrowth shows itself in both innocent and malignant forms, or the superficial wart arises from a present, though dormant deep affection.

Papilloma.—Lichtwitz⁵ has used a fenestrated tube, made like an O'Dwyer's intubation tube. It is introduced into the larynx, having a window cut in it opposite the site of the growth, which will project into the lumen whence it is removed by forceps. If the growth cannot be seen it is always well to try a tube fenestrated anteriorly.

Marchiafara⁶ reports a case which illustrates the danger which, though fortunately of the greatest rarity, may attend papillomata. A man aged forty died quite suddenly of suffocation, and at the autopsy the larynx was found completely occluded by a horny warty growth.

Examination of Larynx in Children.—Escat⁷ has invented a tongue depressor with a curved fork attached to the end with bulbous extremities; these are passed to the back of the pharynx and drawn forward, pulling up the epiglottis. A mirror is then introduced and the larynx examined.

Lack⁸ recommends using the finger of the left hand, pulling forward the epiglottis with the ungual phalanx by firm forward pressure on the base of the tongue.

Laryngeal Vertigo or Ictus.—Moll⁹ gives two cases; in one the patient had violent fits of coughing followed by vertigo and loss of consciousness. The cough appeared to be due to nasal irritation, and ceased after removal of a spur. In the second case the fits were caused by coryza and by laughing. This nasal origin of ictus is worthy of close attention, and is for obvious reasons, probably, generally present. The writer saw a case recently in which the ictus depended on the presence of nasal polypi.

Laryngeal Paralysis.—Toxic paralysis of the laryngeal muscles is brought to the fore by P. Heymann,¹⁰ who describes typical examples

of *Aphonia Saturnina*. In his case, contrary to previously expressed views, the *ab*-ductors of the vocal cords were the group affected and not the *ad*-ductors; he also details as the result of arsenical poisoning a somewhat similar result. Treatment of these cases is most satisfactory, the chief desideratum being removing the patient from his unhealthy surroundings and the adoption of the accepted remedies for removing the poison stored up in the tissues. For instance, the exhibition of **Iodide of Potassium** in the former class.

REFERENCES.—¹ "Ann. des Mal. de oreille," May, 1896; ² "Med. Rec.," May 8, 1897; ³ "Ann. Ot. Rhin. and Laryng.," May, 1897; ⁴ "Laryngoscope," July, 1897; ⁵ "Arch. clin. de Bordeaux.," ⁶ "Arch. Ital. di Otol. Rhin. c. Laryng.," Avril, 1897; ⁷ "Journ. of Laryng.," March, 1897; ⁸ *Ibid.*, April, 1897; ⁹ *Ibid.*, Sept. 1897; ¹⁰ "Arch. f. Laryng.," v. 256, 1896.

LARYNX (Tuberculosis of).

R. Lake, F.R.C.S.

PATHOLOGY.—Castex¹ describes a condition in this disease somewhat analogous to singers' nodule, but differing in several particulars. There is often a history of tubercle. The laryngoscope shows on the free border or upper surface of the congested vocal cord slightly red hemispherical nodules the size of a pin's head. These had been observed to ulcerate and subsequently disappear, whilst in other cases they became tubercular.

Inoculation of guinea pigs with tissue in doubtful cases is suggested by Massei² as being probably of the greatest aid in diagnosis. Whalen says that about 30 per cent. of all cases of pulmonary phthisis suffer from laryngeal complications. He advocates a spray of **Iodine Trichloride** before ulceration occurs, and a spray of 15 to 50 per cent. of **Guaiaicol in Olive Oil** afterwards.

TREATMENT.—S. Solis-Cohen³ uses **Formaldehyde** in solutions of 1 to 10 per cent. of the commercial formaldehyde and ascribes to its use excellent results. It causes fairly intense smarting, and the stronger solutions demand 20 per cent. of cocain, though weaker preparations suffice for the relatively weaker ones of formaldehyde. He draws attention to its penetrative powers and also to its faculty for attacking diseased tissue, both properties being of the utmost value here. The applications are made twice weekly. Heryng⁴ employs **Sulpho-ricinate of Phenol** in 20 to 40 per cent. strength. It is a thick viscid brown fluid and is of undoubted value. It is applied after cocainization, but has the disadvantage of causing rather prolonged discomfort.

Hedderich⁵ reports on the use of **Para-monochlor-Phenol**, but does not appear to have had very brilliant results.

Hajek⁶ and others still recommend insufflation of **Indol**, but the powder must cover the surface of the ulcers.

Injections intra-tracheal are still claiming a first place in the treatment of this most distressing disorder, and amongst those most used are **Camphor** and **Menthol**, 5 grains of each to the ounce of albolene. This is used by S. E. Allen.⁷ **Creasote** or **Guaiacol** in cod-liver oil is recommended by Botey⁸ in strengths of 1 to 2 per cent. Chappell⁹ who has been particularly energetic in the use of these injections, uses creasote with oleum ricini as the vehicle. At the same time he advocates submucous injections by means of an automatic syringe. In doing this, care must be taken not to insert the needle too deeply.

Dysphagia.—S. Solis-Cohen¹⁰ has found **Bromoform** very serviceable in the relief of this the most distressing of all the symptoms accompanying laryngeal invasion.

Brannsfeld¹¹ in an article on the use of **Ligno-sulphite** gives F. Hurtmann the credit of introducing it. In laryngeal phthisis, as the cough becomes less, dysphagia diminishes and ulcers improve up to a certain pitch. The method of using the drug is by inhalation, 10 to 30 per cent. solutions being used. Fasano¹² speaks very highly of **Airol** in this complaint, used as a powder or emulsion. He says it is superior to iodoform or aristol, and is quite innocuous.

Goris¹³ suggests laryngo-fissure, or in other words more radical surgical measures than we have before adopted. He has twice operated upon patients in this way with complete success, but it is quite an open question whether he was justified in operating on cases which were possibly curable by less radical means, though it is not improbable that this will become a recognized method of treatment. We are scarcely ready for it yet.

REFERENCES.—¹ "Journ. Laryngol.," Sept., 1897; ² "Arch. Ital. di Otol., etc.," 1897; ³ "New York Med. Journ.," Oct. 24, 1896; ⁴ "Therap. Monats.," March, May, July, 1896; ⁵ "Munch. med. Woch.,"; ⁶ "Rev. heb. de Laryng.,"; ⁷ "Cincin. Lancet Cl.," Dec. 5, 1896; ⁸ "Gaz. Med. Cut.," Dec. 15, 1896; ⁹ "New York Med. Journ.," No. 19, 1896; ¹⁰ *Ibid.*, Oct. 24, 1896; ¹¹ "Deut. med. Woch.," April, 1897; ¹² "Arch. intern. de med. e Chir.," April, 1897; ¹³ "Rev. heb. de laryng.," June 5, 1897.

LEPRA.

T. Colcott Fox, M.B.

The greatest interest continues to be excited in this disease, and a great amount of literature is the result. Havelburg¹ read a most interesting paper on leprosy in Brazil, and a highly instructive debate followed which is worth reading. Blaschko² reviewed the conditions under which leprosy is found amongst the miserable Lithuanian

peasants in the Memel country adjoining the Russian Baltic provinces. Dehio³ contributes a very interesting historical survey of the prevalence of leprosy in different countries. Grossmann⁴ deals with leprosy in Iceland, and Ehlers⁵ has been investigating in that island and in the Balkan states; and Prussian delegates go to Russia to study the disease. Attention has been directed of late to the nasal mucous membrane as a centre for propagation of the disease. It is advisable to pay special attention to the disinfection of nasal discharges.

TREATMENT.—Radcliffe Crocker⁶ finds the two best remedies in leprosy are **Chaulmoogra Oil** and intra-muscular injections of **Perchloride of Mercury**. The first is useful, provided the patient can take enough of this nauseous remedy. If the patient cannot get above 20 or 30 drops per diem the author finds there is not much good in the treatment, but if he can gradually work up from 3 minims three times a day, to 100 minims a day, his prospects are much improved. Radcliffe Crocker saw a gentleman who had been able to take 500 drops daily by living in the mountains in Peru. In the introduction of *intra-muscular injections of perchloride of mercury* in the treatment of leprosy we believe that Radcliffe Crocker has hit upon a distinctly valuable agent. Our own limited experience fully confirms the favourable results attained by the author, and we eagerly look for reports on its action carried out on an extended scale.

Salicylate of Sodium is thought a good deal of in Germany as a remedy (Koebner, Joseph, Walters). Danielssen believed that **Iodide of Potassium** has an altogether special action on leprosy, especially in the nodular form. He considered it a true specific. Wolff, however, insists that it is a drug which must be administered with great caution in the acute nodular outbreaks, otherwise the nodules ulcerate, fresh ones evolve, and the blood swarms with bacilli. Gallay⁷ has tried **Methylene Blue** in hypodermic injections and by the mouth without effect. Havelburg experimented with **Cultures of Erysipelas Cocci**. Maitland⁸ traced an improvement in two lepers to the administration of **Sheep's Thyroids**.

Liebreich has tried **Cantharidin** in one case with some improvement, and seen another case notably ameliorated by it. Havelburg gave it in six cases without result except that two had albuminuria. Curiously Liebreich has never seen this noxious action on the kidneys. **Serum-Therapy** has been a good deal used. Thus, R. de Luca,⁹ starting with the theoretical idea that the immunity of the rabbit against lepra ought to be accounted for by the animal manufacturing a substance which destroys the vitality of the leprosy bacillus, supposes that if a rabbit be inoculated with leprous material it ought to produce

an antitoxin capable of destroying the bacillus. He therefore injected the blood-serum of such an inoculated rabbit into a leprous man. In one case he saw the leprous fever diminish and the nodules fade away. In the same way the goat, the ass (Gallay) and the horse have been made use of. Carrasquilla,¹⁰ of Bogota, has thus treated one hundred lepers with horse serum, and claims remarkably good results. Some of this serum was sent to Paris, and lepers were treated with it. Hallopeau reported upon it on behalf of a commission appointed by the Academy of Medicine. It was found to be impure and imperfectly prepared, and the results obtained were on the whole not very favourable. Hallopeau prefaces his report with some good remarks on the difficulty in drawing sound conclusions on the action of remedies in leprosy. The disease progresses in such an irregular way by recrudescences at irregular intervals, with often long intervening periods of comparative quiescence, that any remedy administered during an outbreak may easily earn an unwarranted reputation.

Besnier¹¹ mentions a case in which chaulmoogra oil up to 300 drops, and salol up to 5 grammes daily were given. Besnier regards a long course of **Electro-Galvanic Cauterization** as a certain means of reducing leprous nodules. Each tubercle is cauterized interstitially by means of single or multiple points, or by electro-caustic bars when the surfaces to be destroyed are large. With the thermo-cautery the effects are more difficult to limit.

Bacteriological Diagnosis.—Johnston and Jamieson¹² have found the following method useful: A cover-glass is smeared with a drop of the serum obtained by scraping one of the leprosy nodules. This is stained with carbol fuchsin and decolourized with sulphuric acid and methylene blue (Gabbett's fluid). The bacilli are seen in great numbers compared with the tubercle bacillus. The lepra bacilli readily stain by simple aniline dyes, while tubercle bacilli do not. Havelburg says bacilli can be found in recent and even somewhat older leprides of *L. maculo-anæsthetica*, but in old cases neither in the blood nor in the skin. Koebner recommends the proceeding of Kalindero in the maculo-anæsthetic form by the searching for bacilli in the contents of artificial blisters after three or four days. A portion of the cubital nerve can also be excised. As for the presence of the bacillus in the blood, Petrini and Wolff have found them in *L. anæsthetica*, and the latter in a case of mixed leprosy after giving iodide of potassium.¹³ Doutrelepont and Wolters¹⁴ also detected bacilli in the blood in a nodular case. Havelburg pricks the skin and presses out the blood.

REFERENCES.—¹ "Berl. klin. Woch.," p. 1024, 1896; ² *Ibid.*, pp.

43 and 462, 1896, and "Dermat. Zeit." t. iii, p. 411, 1896; ³"Ibid., t. iii, p. 17, 1896; ⁴"Brit. Med. Journ.," 1896; ⁵"Dermat. Zeit.," 1896; "Ann. de derm. et de syph.," June, 1897; ⁶"Clin. Journ.," May 12, 1897; ⁷"Ann. de méd. nav. et colon.," p. 292, Oct. 1896; ⁸"Lancet," Oct. 31, 1896; ⁹"Giorn. Ital. de mal. ven. e. d. pelle," p. 13, 1896; ¹⁰"Sérothér. de la Lèpre," 1897; ¹¹"Hôpital St. Louis Pict. Atlas of Skin Dis. and Syph. Affect.," Part iv, 1896; ¹²"Montreal Med. Journ.," Jan. 1897; ¹³Germ. Cong. of Natural. at Heidelberg and Cong. of Dermat. at Breslau, 1896; ¹⁴"Archiv. f. Dermat. u. Syph.," t. xxxiv, 1895.

LEUCORRHEA.

Theophilus Parvin, M.D., Philadelphia.

Lirola¹ recommends the following formula:—

R ^x Tannin	6 parts	Creasote	3 parts
Alcohol	3 "	Water	24 "

M. A tablespoonful is to be added to a quart of warm water, which may be injected as often as three times a day.

REFERENCE.—¹"Med. Record," Oct. 31, 1896.

LICHEN PLANUS.

T. Colcott Fox, M.B.

A good deal of attention has been directed in France of late to lichen planus affecting the buccal mucous membrane. Hallopeau and Schroeder consider¹ certain lesions in the mouth, which are as a rule absolutely indolent, as pathognomonic of lichen planus, *even though no skin eruption exists*. These authors, and also Dubreueth and Frèche, give minute descriptions of these lesions and point out the differential diagnosis from mucous patches and leuco-keratoses.

Several remarkable cases of lichen planus have been recorded illustrating the curious features which this disease may assume. Thus Fordyce² describes with illustrations an unusual hypertrophic lichen planus of the legs, pubic region, penis and scrotum. Several cases were shown by Stowers and others at the International Dermatological Congress, 1896, of so-called atrophic-lichen planus, in which the papules become sclerosed and keloidal or leave scar-like lesions. Cavafy³ exhibited a most interesting case demonstrating that a ringed eruption may be formed, firstly, by confluence of small papular lesions of originally circinate arrangement; and, secondly, by gradual peripheral extension of large flat papules, accompanied by involution of their central portions. Pringle⁴ also exhibited a case demonstrating both the crescentic arrangement of lesions, and the coincidence of patches made up of acuminate, hard, follicular cones. The diagnosis in such cases may be very difficult, but the presence of some fairly typical papules of lichen planus will serve as a clue.

REFERENCES.—¹"Ann. de derm. et de syph.," 1897; ²"Journ. Cut. and Gen.-Urin. Dis.," Feb. 1897; ³"Brit. Journ. Derm.," 1897; ⁴Ibid., 1897.

LOCOMOTOR ATAXIA. *Græme M. Hammond, M.D., New York.*

Frenkel,¹ of Heiden, has treated, during the past six years, a number of patients by certain muscular exercises, and claims that improvement has always been observed. The author divides co-ordinated movements into : (1,) Those which maintain the body in a given position (static co-ordination) ; (2,) Those which regulate the change of position of the whole body, as in walking, etc. ; and (3,) Those which effect co-ordinated movements of one or more parts of the body when the centre of gravity is left out of consideration, as in the movements of the arms, legs, etc., in the sitting or lying positions. Inco-ordination may effect one or more of these groups. No. 1 represents the slightest, and No. 3 the severest, forms of ataxia. The object of treatment is to convert the simplest ataxic movement into a normal one, and this can be effected by the exercises. For a *résumé* of these exercises the reader is referred to the author's paper in the "Deut. med. Woch. (Dec. 17, 1896). In the writer's experience, while this method of treatment may enable the patient to acquire greater dexterity in the use of his limbs, it does not retard the progress of the disease in any way.

Patrick² calls attention to a symptom of ataxia which is usually overlooked. It consists of a band of tactile anæsthesia around the trunk, generally in the region of the nipple. When very slight it is discoverable only to lightest touches, and sensation to pain is quite normal ; when more marked, there is generally some degree of analgesia, but the band so affected is narrower than that of tactile anæsthesia. The area begins to develop as a narrow zone—or rather two half zones, one about either half of the body—and gradually broadens as the pathological basis progresses. In the very early stages the zones may be incomplete, not reaching to the middle line, or restricted to the back or front alone.

A writer in the "Journ. de méd. de Paris" speaks favourably of the hypodermic injections of **Sodium Phosphate**. He claims that by its use the darting pains and the trouble of motility are considerably diminished. He used a 0·1 per cent. solution in sterilized water.

REFERENCES.—¹ "Brit. Med. Journ.," Feb. 13, 1897 ; ² "New York Med. Journ.," Feb. 6, 1897 ; ³ *Ibid.*, Nov. 14, 1896.

LUNGS (Œdema of). (See "Œdema.")

LUPUS ERYTHEMATOSUS.

T. Colcott Fox, M.B.

Joseph Schütz,¹ of Frankfort on the Main, speaks of the unsatisfactory results of prevailing methods of treating this disease, and particularly of the positive harm done with highly irritating applications employed for too long a time. He has found that **Arsenic** in very

weak solutions has a favourable influence on the disease. Fowler's solution, diluted with from four to six times its weight of water and painted on the affected area twice a day, caused within six days swelling and slight painfulness of the part, but without any exudation of serum; this condition subsided in eight days more under the use of mild pastes. The arsenic spared the healthy tissue. By this treatment he had cured nine cases. Healing had taken place without the formation of scars.

Köbner states that mercurial plasters are no good.

Neisser thinks that heat and cold are the direct causes. He divides cases into (1,) Torpid, in which **Naphthol** and **Sulphur Pastes** promoting desquamation are useful; and (2,) Inflammatory and active, in which **Soothing Applications** are called for.

Nevins Hyde² says that the daily local application of a saturated solution of **Pyoktanin Blue** is of great value in torpid cases.

REFERENCES.—¹ "Cong. Germ. Nat. and Phys.," Sept., 1896; ² "Chicago Clin. Rev.," July, 1897.

MADURA FOOT.

James Cantlie, F.R.C.S.

Professor Edgar Crookshank,¹ in connection with the subject of actinomycosis, discusses the genesis of madura foot—mycetoma or the fungus-foot disease of India. He points out a considerable resemblance between the two diseases. Dr. Kanthack some time ago showed that in the growth are to be found small round bodies, closely resembling in microscopic appearance the rayed bodies met with in actinomycosis, and yielding identical reactions with staining reagents. Various experiments, as to the transmissibility of the streptothrix maduræ, however, have given negative results; and the present state of our knowledge is that the exact relation of the mycelial fungus and the streptothrix requires further investigation.

REFERENCE.—¹ "Lancet," Jan. 2, 1897.

MALARIA. (See also "Hæmaturia.")

James Cantlie, F.R.C.S.

Amongst a wealth of interesting material the following observations and conclusions are some of the most striking:—

(1,) The malarial parasite may retain vitality for an indefinite period in the dried state. This was proved in the case of a slide preparation, which, in an unstained condition, had been set aside and dried. After some days distilled water was added to the specimen, and the "activity of the various forms was restored within twenty minutes"—an all important statement, and bearing directly on the life history of the malarial parasite.

(2,) The temperature of the preparation under observation has a

distinct relation to the activity of the parasite. If one side of the slide be kept cooler than the other, the changes the parasite undergoes are seen to be stayed or slowed in their development as compared with the side which is maintained at a higher temperature. Further, if evaporation has been prevented during the experiment, merely allowing the temperature to rise will ensure a return of activity to the cooled blood cells.

(3.) The existence of two malarial parasites—the quartan and tertian—is insisted upon. The quartan parasite, however, is responsible for the greater number of malarial fevers, but the two poisons may circulate together in the blood and cause a mixed infection.

The varieties of fever caused by the quartan parasite are : (*a*,) Quotidian ; (*b*,) True quartan ; (*c*,) Irregular, often beginning as a quotidian ; (*d*,) A fever coming on every eight or ten days, or every fortnight or month ; (*e*,) Chronic malarial fever, with a temperature not exceeding 100° F. ; (*f*,) Malarial cachexia ; (*g*,) Splenic enlargement, with or without fever ; (*h*,) Mixed type of fever, with atypical intermissions. The “tertian” parasite is met with in patients suffering from tertian or quotidian, but it may be found in cases where the quartan exists, the latter speedily effacing the former however.

Analysis of one hundred cases gives the distribution as follows :—

(1.) Produced by the quartan species of parasite : Quotidian fever, seventy-three ; quartan fever, three.

(2.) Produced by the tertian species of parasite : True tertian fever, fifteen ; quotidian fever, seven.

(3.) Produced by mixed infection : Alternating quotidian and tertian, two.

(4.) Free flagellæ. These do not refer to those developed from elongated crescents, but to flagellæ developed in special cysts. Of these there are three varieties, large, medium and small. They are met with especially in tertian ague and the more continued forms of fevers.

(5.) The hæmatozoon of malaria (in common with those of cholera and the amœba coli of dysentery) passes through a series of changes of the following nature : An encysted embryonic stage, a flagellate stage, an amœboid stage, and, lastly, a stage of disintegration, during which the spores are set free.

Surg.-Capt. C. H. Melville¹ testifies to the length of time malarial crescents continue to be found in the blood. After twelve weeks' residence in a peculiarly healthy station, viz., Purandhar, Bombay, although under treatment in hospital, the crescents were still found. Surg.-Capt. Melville remarks that this fact would seem to point to the crescents being of the nature of spores.

That the mosquito does extract blood from persons suffering from malaria in common with others who may be healthy or diseased, we know; and that within the body of mosquitoes, as under other circumstances, crescents may become spheres, and flagellæ may develop therefrom; but that the mosquito may inoculate the healthy by having these parasites in its stomach is an idea scouted by most. Surg. Ross, Surg.-Lieut.-Col. A. J. Strumer and others record experiments and clinical observations which demonstrate that at any rate the case of bites by mosquitoes causing malarial attacks is "not proven."

Dr. Boisson, a French military surgeon, finds that the nails of persons suffering from malarial fever show a characteristic discolouration. This has often been observed before, but Dr. Boisson explains that it is not merely a livid condition common to all and every kind of fever, but that the change is due to hæmoglobin set free by the destructive process in the red blood corpuscles. The colour of the nail is not the livid blue tint due to local asphyxia, but a slate gray appearance of definite due. Dr. Boisson claims to have diagnosed several feverish conditions from malaria by this test alone.

Surg.-Major Ross, I.M.S.,² draws attention to the conflicting opinions which centre around the involution and evolution theories regarding the malarial crescents and their life history. By the evolution theory as affecting this subject is meant the belief that the microscopic changes observed in the blood of malarial persons are attributable to a developmental process, and are not to be put down to a mere degeneration—involution—of the parasites of malaria. The process of change observed in the crescents of malarial blood is first, that of transformation into spheres (crescent—derived—spheres), and then flagellation or the extrusion of mobile processes.

Surg.-Major Ross, by a number of careful experiments and observations, seems to have proved that (1,) Flagellæ exist within the body of the spheres before the flagellæ extrude from out the body of their containing cell. This is an important point, as it does away with the supposition that the act of extrusion is a mere process of dying and a symptom of degeneration; (2,) The exposure to, or withholding of air determines the rapidity of change of the crescents into spheres and flagellate bodies.

The following experiment speaks for itself: Place a drop of vaseline on a prepared finger, prick the finger through the vaseline; as the blood rises in the vaseline remove the whole from the finger and place it on a slide. During this manipulation, of course, care must be taken that the blood does not for even a second become exposed to the air, a by no means easy accomplishment. The blood is now examined

for crescents, when hardly one of the crescents will be found transformed into spheres. Of course, after a time the corpuscles and the crescents die, but these changes are quite distinct from flagellation, and are characterized by vacuolization, pigmentary movements, etc ; (3,) In blood exposed to the air for five seconds to five minutes the crescents are transformed into spheres, and become flagellate almost in a direct ratio to the time of exposure ; (4,) In the blood extracted from malarial persons by mosquitoes and leeches, spheres and flagellæ were found plentifully.

Surg.-Major Ross holds it is neither low temperature, nor exposure to air, or contact with animal stomachs that determine the initiative of these developmental changes, but he maintains that the abstraction of water from the medium in which the corpuscles float is the genesis of the process. He proceeds to demonstrate this by remarking that the longer the blood is exposed to air the more dense will become the fluid around the corpuscle. He explains this phenomenon in the case of mosquitoes and leeches, that whilst these animals are engaged in sucking the blood from their victims their bodies are seen to sweat freely ; in fact, that droplets of water are voided from the mosquitoes during the process of suction. Although the mosquito is therefore reduced to the condition of a mere foreign body and receptacle, Surg.-Major Ross is inclined to the belief that it is not wholly so as regards the developmental changes, for he finds that in the stomach of the mosquito more flagellate bodies appear than when the blood is merely exposed to the air. The mosquito's part in the evolution of this parasite seems to be not so much that he is an essential factor to flagellation as that he serves as a host for a time at any rate of the parasite during flagellation, and in all probability serves as the carrying agent to media favourable for the next stage in its development. So far as these arguments go they seem to help us towards a better knowledge of the plasmodium malaria, and point to the belief that the transformation must be a vital phenomenon and not one of degeneration.

Surg.-Capt. P. Hehir, I.M.S.,³ discusses the hæmatozoön of malaria at length. The entire paper is valuable, as showing great patience and unremitting labour over a period of nine years.

The belief in the multiplicity of parasites seems to be deep seated, and as many as three types causing (a,) Summer-autumn, (b,) Tertian, and (c,) Quartan fevers are classified. These three with their variations, especially that of the double tertian, seem to satisfy investigators as to the range of hæmatozoa met with in malaria.

Some important facts have been demonstrated during the year, viz.,

that, (a,) Drinking of malarialized water does not cause an attack of malarial fever; (b,) That the introduction of blood from a patient suffering from malaria, either hypodermically or by the intravenous method into a healthy person, does cause an outbreak of fever of a malarial type, in the person so inoculated; (c,) That the bite of mosquitoes themselves charged with malarial blood does not cause fever; (d,) That the plasmodium malaria can co-exist in the blood of a patient suffering from well-marked typhoid fever. These results give more precision to our hitherto empiric knowledge.

There is in the opinion of the writer (J. Cantlie) a variety of fever which is characterized by a periodicity in weeks, which does not yield to quinine, and is possibly not malarial. In China there is a marked fever with distinctive symptoms, lasting seven or fourteen days, in which quinine has no apparent effect. The fever is not typhoidal in its character, nor do the symptoms resemble those of malarial fever. Quinine does not affect it in the least, and time alone seems to limit its course. The defervescence on the seventh or fourteenth day occurs to almost the minute. From a temperature of 105° F., on the morning of say the seventh day, in two hours the temperature will fall to normal, and remain at, or below, normal subsequently. Its sudden defervescence resembles that which takes place in lobar pneumonia more than any other occurrence. This fever is not confined to China but is met with on the Canadian and American coasts facing the Pacific, and where there is *no malaria*. Typhus fever we know is by the public sometimes termed the two-week fever, in contra-distinction to typhoid which is spoken of as the three- or four-week fever. The onset of the one- or two-week fever marks the type. A furious onset notifies the advent of a seven-day attack, just as surely as a less sudden development indicates a fourteen-day illness. When a fever in warm climates resists full and continued doses of quinine, it is either typhoid, or a seven-day or fourteen-day fever. Typhoid is to be distinguished by the train of symptoms, and more particularly by the temperature. The seven-day or fourteen-day fever sets in suddenly, develops quickly, and the temperature will rise to the maximum immediately or within forty-eight hours.

Is Malaria a Water-borne Disease? —Dr. R. Norton⁴ analyzes and comments on the opinions of writers and workers in many nations. He is forced to the conclusion that there is no satisfactory evidence that malaria is water-borne. In fact, his deductions are all the other way, and he sums up his evidence in terms well nigh excluding that form of infection as a probability.

The water-borne theory so often discussed again comes into this

controversy. All direct experiments to prove that malarial-water and mosquito-water are infective have proved negative. Surg.-Major Ross administered water in which malarialized mosquitoes had died after depositing their eggs, but although in one case fever supervened, the greater number showed no reaction.

Most important are Zeri's experiments. They consisted of a series with the following results : (a,) Nine people were made to drink water from malarious places in quantity and for a considerable time—results negative ; (b,) Marsh water was sprayed on the mucous membrane of the respiratory passages of a number of persons—again with negative results ; (c,) Five persons had injections of water from malarious places into the bowel—still were the results negative.

Surg.-Capt. McNaught⁵ gives an analysis of fifty-four cases of malarial fever he examined carefully for the plasmodium. He found the parasite in fifty of the specimens. "When he met with large intra-corpuscular pigmented forms of parasite, the affected corpuscle being full and swollen, tertian fever was diagnosed. When on the other hand he found numerous unpigmented intra-corpuscular forms, infected corpuscles not being markedly enlarged, the pigmented intracorpuseular forms present being small and few in number, he diagnosed "summer-autumn" fever. Surg.-Capt. McNaught seems to have found blood well provided with parasites, for he remarks that "almost every corpuscle contained one."

Enteric fever, according to the same authority, frequently develops in malarial cases, the two fevers being conjoined, and the diagnosis decided on clinical evidence. In one patient the malarial parasite was observed during the whole time the patient was under treatment for enteric fever.

Three cases cited by Surg.-Capt. McNaught exemplify the value of examination of the blood in diagnosis. In one the case was shown to be malaria and not tuberculosis. In another the rapid onset of fever in a patient convalescent from enteric fever was shown not to be a relapse but to be malarial. In another, in which the symptoms suggested rheumatic fever, crescents were found in the blood, and the patient, who had at first been put on salicylate of soda, was treated by quinine with rapid improvement in his symptoms.

The Parasite of Malarial Fevers at Sierra Leone.—Surg.-Capt. Duggan and Dr. George Thin⁶ state that all the appearances described by Marchiafava, as being found in the summer-autumn fevers of Rome, were seen in the blood of persons suffering from fever in Sierra Leone. In nearly four hundred cases neither the quartan parasite or type of fever was observed, and in the single case of tertian fever

met with, the corresponding parasite was seen. The authors add two points of practical issue: the one advocating the prophylactic property of quinine in 5-grain doses administered daily; the other, that mosquitoes were only present for one month out of the twelve at Sierra Leone, and that on this account they did not think that mosquitoes have much to do with the spread of malaria.

The Amœboid Contractility of the Red Blood Cell.—Dr. Moser,⁷ Brooklyn, N. Y., maintains that in pernicious anæmia, and most forms of secondary anæmia (carcinoma of the stomach, etc.), amœboid contractility of the red blood cell at the temperature of the air exhibits more active movements than are to be found in the white corpuscles at the same temperature. He denies the symmetry of the flagellæ of the plasmodium malaria; nor does he recognize their extreme activity as an established fact.

Malaria Anæmia.—Dr. Terres,⁸ Mexico, makes a statement which opens up a wide field for discussion. He asserts that the hæmatozoa can live a long time in the blood, multiplying only slightly and without making their presence manifest. They make themselves manifest in such cases by destroying the red corpuscles: and this he claims to be the mechanism of production of the true malaria anæmia, *which presents itself without any access of fever.*

In reference to this subject it may be said that all Europeans, dwelling in warm climates, who have never suffered from any climatic disease, become anæmic. This is a general statement which but few will gainsay. Exposure to malarial influences is almost co-extensive with warm climates; therefore anæmia in the tropics is malarial. This syllogism is not of course wholly true, as other causes of anæmia arise in the tropics, nevertheless it is widely true, and many, if not most, will accept it. In other words, all Europeans resident in tropical climates have (or may have) in their blood the hæmatozoön of malaria without the effects becoming manifest, but the red corpuscles are being gradually destroyed with the result that in course of time anæmia supervenes. Although other causes than malaria induce anæmia in the tropics as elsewhere, there is no doubt malaria is the chief and potent cause of Europeans in warm climates becoming bloodless. In short, all residents in malaria districts have the hæmatozoön within them, and it only requires some untoward condition such as fatigue, exposure to cold, or specific illness to cause the parasite to leap into marked activity. This theory finds many arguments to support it. How else can it be that many tropical residents, who have dwelt for years in malarial regions never develop ague until they leave the warm for a colder climate. Many more such state-

ments in favour could be brought forward, but the only conclusive evidence will be from a patient and exhaustive search in the blood of all persons dwelling in malarial districts for the hæmatozoön whilst the person is in good health.

TREATMENT.—The *Preventive* treatment of malaria by **Quinine** in suitable doses, finds many supporters. Laveran⁹ concludes, after reviewing available evidence, that quinine proves very potent in preventing, or at least mitigating, malarial disease, even in very unhealthy localities. The objections raised against its use are, firstly, that the daily administration of this drug induces attacks of indigestion; and secondly, that the system becomes habituated to its use. Yet, argues Laveran, these objections are not sound. A dose of $2\frac{1}{2}$ grains, or even 5 grains, can be employed for months with impunity. The daily dose so as to avoid dyspeptic difficulties, and yet to ensure the prophylactic (parasiticide) action of quinine, should not be less than 2 nor more than 9 grains. Some prefer a dose of 15 grains thrice weekly. The hydrochloride is preferable to the sulphate; and the best time to take quinine is at meals, and in wine or cachets. Quinine should not be taken with tea or coffee, as with the latter, more especially, a portion of the quinine is precipitated.

Daland¹⁰ recommends, when gastric catarrh is present, to precede the specific treatment of malaria by a short course of small doses of **Calomel**. It may be necessary to withhold quinine by the mouth altogether, and give it by suppository or subcutaneously.

Dr. Terres,¹¹ Mexico, states: "When a person whose blood is known or supposed to contain hæmatozoa is about to suffer from an attack, he can avoid it by taking, two days previously, the dose of quinine that in that locality prevents the access. This is an important fact for the application of hydrotherapy in the cure of malarial "anæmia."

"Quinine ought to be administered immediately after the diagnosis is made. It is an error to believe that it should be given any specific number of hours before the attack."

Curative Treatment.—The newest method of treating malaria is that advocated by Dr. Alcide Treille.¹² The writer advocates that good may be done in quartan fevers by the injection of Roux's **Anti-diphtheritic Serum**. He employed the serum in two cases with the result that the intense violent initial chill was completely suppressed. The attacks themselves were not modified in any way; the serum did not increase or diminish the temperature or the duration of the paroxysm, and only the chill that would have next followed the injection was suppressed. In both patients the injection produced a

veritable breaking up of the "humours" twenty-four hours afterwards, which manifested itself in the first patient by diarrhœa and in the second by a quite unusual profuse sweating which produced apyrexia for a day. There was no eruption, abscess, or superadded fever.

Preparations of quinine, says the author, must be employed. A daily dose of 4 grains for eleven days is necessary in order to produce the first apyrexia. Afterward $2\frac{1}{2}$ grains are sufficient. The author states that, as he obtained absolutely similar results in another series of cases of quartan fever with equally small doses of quinine, he is not able to say that the serum facilitated the action of the quinine in the second patient, to whom he had been obliged to give it.

The antiphtheritic serum in these two cases caused the disappearance of the most disagreeable symptom of the attack, the chill, and in one patient it led, after several attenuated attacks, to a definite recovery. These results, says M. Treille, justify us in hoping that in one of the various procedures of serum-therapy we may find a substitute for quinine in the treatment of intermittent fevers.

REFERENCES.—¹"Brit. Med. Journ.," Feb. 27, 1897; ²Ibid., Jan. 30, 1897; ³"Lancet," Nov. 23 and Dec. 5, 1896; ⁴"Johns Hopkins Med. Bull.," March, 1897; ⁵"Brit. Med. Journ.," Sept. 26, 1896; ⁶"Royal Med. and Chir. Soc.," March, 1897; ⁷"Med. Rec.," Feb. 20, 1897; ⁸Ibid., Dec. 5, 1896; ⁹"New York Med. Journ.," April 10, 1897; ¹⁰"Med. Rec.," March, 1897; ¹¹Ibid., Dec. 5, 1897; ¹²"Gaz. méd. de Nantes," Sept. 12, 1896.

MALTA FEVER (In India and elsewhere). *James Cantlie, F.R.C.S.*

Prof. Wright, of Netley, and Surg.-Capt. F. Smith' have dealt with this question, their test of differential diagnosis being based on the serum test. Their methods of investigation are fully stated, and their conclusions are pregnant with interest. The following are the more important: (1,) The micrococcus Melitensis (Bruce) is the true cause of Malta fever; (2,) Malta fever is not confined to the littoral of the Mediterranean. It is proved to exist in three stations at least in Northern India, and in all probability in Hong Kong; (3,) A certain number of cases diagnosed as typhoid fever have been proved by this test to be Malta fever: (4,) A number of cases which are diagnosed typhoid, are neither typhoid nor Malta fever, and in which the malarial parasite is not found, belong to an undefined category of continued fever, which might profitably be investigated.

In connection with, and in confirmation of, the above statements, the writer (J. Cantlie) appends the following remarks as a corollary: (1,) In the autumn of 1895 Hong Kong was visited by an outbreak of fever which was new to the island. In almost all respects it was

identical with "Malta" fever, even to the swelling of the testicle, which is so characteristic of Mediterranean fevers. It was not malarial, as quinine was useless; nor was the malarial parasite to be met with in the blood. On the other hand it was certainly not typhoid. A paper on this subject was read before the Hong Kong branch of the British Medical Association, by Dr. Hartigan, in which it was maintained that the fever in question was neither malarial nor typhoid—a conclusion in which the writer fully concurred; (2.) In the writer's (J. Cantlie) remarks on malaria in the present volume (p. 380), it will be seen he instances a seven-day and a fourteen-day fever which is not typhoidal and possibly not malarial, nor does it bear the faintest resemblance to Malta fever. This fever no doubt comes under the category mentioned by Prof. Wright and Surg.-Capt. Smith, and classed above under the No. 4 heading.

REFERENCES.—¹"Lancet," March 6, 1897, and "Brit. Med. Journ.," April 10, 1897.

MANIA (Acute). (See "Insanity.")

MEASLES.

Henry Dwight Chapin, M.D., New York.

Dr. Koplik¹ states that an early diagnosis of the invasion of measles may be made from a study of the exanthemata as it appears on the buccal mucous membrane and inside of the lips. We invariably see here a distinct eruption, consisting of small, irregular spots, of a bright red colour. In the centre of each spot, there is noted, in strong daylight, a minute bluish-white speck. These spots, with accompanying specks, are absolutely pathognomonic of beginning measles, and when seen can be relied upon as the forerunner of the skin eruption. They do not appear upon the soft or hard palate.

REFERENCE.—¹"Archiv. Ped.," vol. xiii, No. 12, 1896.

W. Gilman Thompson, M.D., New York.

Dunley Owen¹ uses **Jacket Poultices** to the chest to favour the appearance of the rash, and limit the liability to pulmonary complications. Among three hundred cases thus treated, but four deaths occurred. C. J. Rix² prefers **Warm Baths** (100° F.) to develop the rash.

REFERENCES.—¹"Lancet," June 20, 1896; ²"Brit. Med. Journ.," Nov. 7, 1896.

MEASLES (German).

W. Gilman Thompson, M.D., New York.

John Brownlee and Campbell S. Marshall¹ describe an epidemic of roseola occurring in connection with cases of both measles and scarlatina, but demonstrating anew the independent nature of roseola.

REFERENCE.—¹"Glasgow Med. Journ.," March, 1897.

MELANCHOLIA. (See "Insanity.")

MESENTERIC CYSTS. (See "Abdominal Surgery.")

METORRHAGIA.

Theophilus Parvin, M.D., Philadelphia.

R̄ Ergotininæ	0.20 cgm.	Aq. Laurocerasi	10 gm.
Alcoholis	2 gm.		

Aq. dest. ster., q.s. to make 100 gm. of solution.

Sig.—Inject in twenty-four hours from a quarter to a half of a syringe-ful.

REFERENCE.—"Med. Record," Feb. 27, 1897.

MIGRAINE.

Græme M. Hammond, M.D., New York.

Savigny¹ believes that those who suffer from other neuroses and from gout, rheumatism, diabetes and anæmia are particularly liable to this disease. Constipation is also an important adjuvant condition.

Haig,² recognizing the co-existence of this disease with an increased excretion of uric acid, uses large doses of **Citric** or **Nitro-Muriatic Acid**. A nitrogenous diet should be forbidden. The treatment between the attacks should be the reduction of obesity (method of Oertel), hydrotherapy, total rest, both physical and mental, before a cold bath, with physical exercise afterwards, or, if the bath is a hot one, by rest after it (procedure of Pelezeus). Rossback believes in the value of local **Massage**. Dunn has used **Cocain** hypodermically. Morris Lewis advises 10 drops of the **Tincture of Eucalyptus** four to six times daily, while Gill Wylie prefers 1 grain of **Oxgall** and 1 drop of **Essence of Gaultheria** six times daily. The author employs **Caffein** and **Bromide of Ammonium** in peppermint water every two hours during the attack, recommending in addition **Electricity**, either static or galvanic with general faradization.

Lewy³ speaks highly of the value of **Methyl Blue** in the angiospastic form of migraine. He gives $4\frac{1}{2}$ grains divided into three doses, the doses following each other at two-hour intervals. It should be given at the beginning of the attack. If it is so given it is always effectual; the pain is barely noticeable and disappears entirely by mid-day. It also diminishes the frequency of the attacks.

Schindler⁴ calls attention to the idiosyncrasy on the part of some patients for this drug. In the majority of cases a daily dose of 15 grains can readily be borne. There are cases in which serious, though not dangerous, symptoms are produced. The mild symptoms are: Weakness in the limbs, paræsthesia, mental prepossession, vertigo and nausea.

Herringham⁵ reports two cases of migraine treated successfully by Haig's method, which simply consists in depriving the patient of red meat. In neither of his cases was there any affection of the teeth, nor any of the ordinary symptoms of indigestion between the seizures. Nor could he trace any family history of gout, rheumatism, or any nervous disease.

Herter⁶ regards migraine as a toxæmic condition, the toxins, probably albumoses, being absorbed from the gastro-intestinal canal. In seven cases he had examined the stomachic contents during the paroxysm, and in all of these he found evidence of the arrest of gastric digestion. He therefore advocates the plan of washing out the stomach at the beginning of the attack with water at a temperature of about 105° F., followed by a rapidly-acting aperient, such as a teaspoonful or more of **Carlshad Salts**. The action of this should be aided by a soap and water enema. He does not recommend antipyrin, but speaks in favour of 10-grain doses of **Phenacetin**, of 5-grain doses of **Antifebrin**, and especially of **Ammonol**. Between the attacks milk should constitute the proteid food of at least one meal a day. He also recommends bicycle and horseback riding.

Aritzman⁷ recommends the following formula :—

℞ Spartein Sulphate	$\frac{1}{2}$ grain	Antipyrin	7½ grains
Caffein	1½ grains		

Take at intervals of two hours until four doses have been taken, even though the pain has disappeared.

In the "Practitioner"⁸ the following prescription is recommended :—

℞ Exalgin	gr. j	Syrup	fl. ʒj
Rum	fl. ʒj	Water	fl. ʒiv

A tablespoonful should be given three times a day.

Gilles de la Tourette⁹ recommends the **Bromides**: Starting with 30 grains a day for a week, the daily dose is raised by 15 grains a week. After the maximum dose is reached it is reduced progressively by the same amount down to the starting point. In this manner 100 grains a day may be given. When the initial dose is reached it is again increased and decreased in the same manner as before. By this means migraine of long standing may be cured, but the treatment must be continuous; and may extend over more than a year. This treatment is not suitable for mild cases and is useless to arrest an attack which has once begun.

REFERENCES.—¹ "Ind. Lancet," Feb. 11, 1897; ² Ibid.; ³ "Therap. Gaz.," Jan. 15, 1897; ⁴ Ibid.; ⁵ "St. Barthol. Hosp.," April, 1897; ⁶ "Journ. Nerv. and Ment. Dis.," Jan., 1897; ⁷ "Presse méd.," 1897; ⁸ "Practitioner," May, 1897; ⁹ "Brit. Med. Journ.," April 24, 1897.

MORVAN'S DISEASE. *Græme M. Hammond, M.D., New York.*

Marinesco¹ reports the pathological findings in a case of this disease. The lesion was discovered in the gray matter, involving especially the posterior horn, and, to a slight degree, the anterior horn also, at least in the lower cervical region. The portion of the cord affected included the centres for the sensory, motor, and vaso-

motor innervation of the hand. The nerves were intact. He concludes that the trophic disturbances in Morvan's disease should be referred to a lesion in the posterior horn, or, more exactly, in the intermediate and posterior gray matter.

REFERENCE.—¹ "Journ. Nerv. and Ment. Dis.," Nov., 1897.

MYELITIS (Acute). *Græme M. Hammond, M.D., New York.*

Taylor,¹ in his article on this subject, considers the object of treatment is not only to control and subdue the inflammatory process but also to prevent any of the paralytic effects of the disease from becoming dangerous to life. These effects are: Trophic disturbances, retention of urine and consequent cystitis leading to kidney disease, and constipation and abdominal distension. Very serious trophic disturbance may arise from very slight pressure. Careful watching is therefore necessary, and the parts on which pressure comes should be frequently sponged and spirits rubbed into them with the palm of the hand. A water-bed, or at least waterpillows, should always be used.

If symptoms of retention of urine supervene, the urine should be drawn and the bladder washed out with a mild antiseptic.

There is usually constipation, which is frequently benefited by administering from $\frac{1}{6}$ to $\frac{1}{4}$ gr. **Ext. of Belladonna** twice daily. Enemata of glycerin will also be found serviceable. For the distension, gentle rubbing of the abdomen may be practised. Sometimes it is necessary to draw off the gas by passing a rubber tube through the rectum into the colon.

To allay the inflammation the author recommends **Ergot** and **Belladonna**. Strychnia is contra-indicated all through the acute stage. During this period the only treatment necessary is absolute rest in bed, light fluid diet, careful attention to the skin, the bladder, and the bowels. Counter-irritation should not be used. When there seems to be no further danger that the inflammation is extending, **Iron** and **Quinine** may be given in small doses, especially if, as is often the case, some anæmia is associated with the myelitis. The diet also may gradually be made more liberal, and a little stimulant may be added if it seems advisable. Counter-irritation may now be used on each side of the spine over the seat of the lesion.

Sometimes the bladder trouble persists even after recovery is well under way, and the patient is able to walk a little. In this case **Strychnia**, in small doses, has a very beneficial influence. In some cases **Arsenic** and **Chloride of Aluminium** seem to have a tonic influence on the affected nervous structures.

REFERENCE.—¹ "Treatment," March 11, 1897.

NERVE (Suture of).*Priestley Leech, M.D., F.R.C.S.*

Dr. Ochsner,¹ of Chicago, has come to the following conclusions as regards suture of nerves : (1,) Every severed nerve should be sutured even after a number of years ; (2,) The earlier the operation the better the result ; (3,) If neither sensation nor motion be established within a year, the nerve should be again exposed, the cicatricial tissue removed and the freshened ends sutured ; (4,) The ends should be clean cut and should contain neither crushed nor cicatricial tissue ; (5,) Tension must be avoided ; (6,) The wound must heal without suppuration to secure the best results ; (7,) Hæmorrhage should be perfectly controlled to prevent an intervening clot ; (8,) Carefully prepared catgut is the best suture material ; (9,) After suturing the ends, either directly or at a distance, it is well to stitch a fold of fascia over them ; (10,) Keep the limb at rest ; (11,) The external incision should be ample.

REFERENCE.—¹“New York Med. Journ.,” Nov. 28, 1896.

NEURALGIA (Trifacial). *Græme M. Hammond, M.D., New York.*

Ricketts,¹ from a survey of the literature, together with experimental observations upon dogs, concludes that *ligation of the common carotid artery* is safer, more certain, and attended with fewer serious consequences than any of the inter-cranial operations for the relief of trifacial neuralgia. The cause of this disease, he considers, is either congestion or anæmia. When congestion, ligation is the more certain to afford relief. The cellular structure of the ganglion is not affected by the operation. As the size of the blood-vessels on the side ligated does not seem to be diminished at the end of eight weeks, the cause of relief lies evidently in the fact that the blood-pressure is much lessened, inasmuch as lowering of arterial tension in any congested area affords relief.

REFERENCE.—¹“Med. Rec.,” Nov. 20, 1897.

NEURASTHENIA AND HYSTERIA (Traumatic). (See also “Insanity.”)*Græme M. Hammond, M.D. New York.*

Knapp,¹ of Boston, contributes an interesting paper on this subject. His deductions were based on the study of two hundred cases in the hospital of Boston. Of these, one hundred and three were not subjects of litigation. The author differs from Strümpell, who claims that the genesis of most of the litigation cases is psychical, because, under conditions precisely similar, one sees the symptoms of traumatic neurasthenia or hysteria in non-litigation cases, and because the symptoms developed almost immediately after the accident in many litigation cases before the intent to resort to legal redress was decided

on. Further, the relative frequency of the symptoms in the litigation and the non-litigation cases is about the same. The author stated that psychical shock alone might produce hysteria or neurasthenia, but it was more difficult to answer the question whether physical injury alone, unattended by psychical shock, could do so. His own belief was that psychical shock played a subordinate part, and that physical injury was the important cause. Neuropathogenic heredity he had found of minor importance.

Hysteria and neurasthenia have many symptoms in common. Among these are inability to work mentally or physically, headache, vertigo, pain in the back and limbs, paræsthesia, rapid pulse, loss of appetite, diminution of urine, exaggerated reflexes, congestions, and coldness of the extremities. In hysteria there were contraction of the visual field, hemi-anæsthesia or local anæsthesia, and disturbances of the special senses of a nature usually regarded as diagnostic of hysteria. In four of the cases of neurasthenia, however, he observed contraction of the visual field without other stigmata of hysteria.

In regard to the prognosis, Dr. Knapp does not believe in the remarkable recoveries which take place as soon as damages are obtained. He had seen some cases of eight, twelve, and even twenty years' duration. The longer hysteria lasted the less likelihood of complete recovery. As to the treatment he thought some occupation was to be preferred to allowing those patients to brood over their troubles while idle, yet judgment was required, lest they do too much or worry under the labour and excitement of making a living.

Horsley² speaks of the rises of temperature which he has observed in cases in which the symptoms began acutely and were mixed with general symptoms of concussion. He has known the temperature to suddenly rise as high as 111° F., and in one case the pyrexia was accompanied by delirium and hallucinations. The pyrexia differs from that due to coarse cerebral lesions in being at once controlled by sponging the surface of the body. He considers the most successful treatment to be **Isolation**, at any rate for a month; **Massage**, general and local, for six weeks; and **Over-feeding**.

REFERENCES.—¹ "Med. Rec.," Feb. 20, 1897; ² "Lancet," Feb. 27, 1897.

NEURITIS.

Græme M. Hammond, M.D., New York.

Allyn¹ reports several cases of multiple neuritis following attacks of influenza. These may be sensory, motor, vaso-motor, or trophic symptoms combined, but sensory and vaso-motor symptoms are more prominent than in diphtheria and some other causes of the disease.

Recovery does not take place usually in less than our weeks' time, and may be delayed several months.

Treatment should consist first in absolute **Rest** in bed. **Anodynes** should be given to relieve pain. **Morphine** may be necessary, but may often be replaced by **Codein**. **Cinchonidin Salicylate** is a valuable remedy, especially when the pain is not of the greatest severity. At a later stage **Potassium Iodide** and **Mercuric Chloride** in small doses are helpful. When the pain is situated in a limb, firm **Pressure** with a flannel bandage will afford relief. **Blisters** of the painful nerve trunks, when they are superficial, are also valuable in relieving pain.

The writer has frequently found that **Hot Baths** of half-an-hour's duration, or even longer, give great relief. The **Hot Pack** may also be used to advantage. By these means the administration of opium or other injurious anodynes can often be avoided.

REFERENCE.—¹ "Med. Rec.," Nov. 6, 1897.

NIGHT SWEATS.

F. de Havilland Hall, M.D., F.R.C.P.

Though night sweats occur most frequently as a complication of phthisis, they may be met with in other diseases. It will be therefore convenient to devote a special article to the consideration of the treatment of this troublesome and exhausting symptom.

Dr. Stockman¹ advocates the use of **Camphoric Acid**. This substance is formed by oxidizing camphor with nitric acid. It occurs in white, needle-shaped crystals. It has no smell, but a somewhat bitter taste. In phthisical sweating it is as efficient as atropin, but it is, perhaps, not so powerful an anhidrotic as picrotoxin. It is useful, however, both on its own account, and as a change from one or other of these. It is given in powder (grs. 30), capsule, or catchet at night. Owing to its insolubility, it is only slowly absorbed from the intestines, and should therefore be given about two or three hours before the sweating is expected. The only unpleasant effect observed has been slight irritation of the stomach. It seems to be non-poisonous, even in large doses, and in this respect has distinctly an advantage over belladonna, picrotoxin and agaricin. Experiments on sweat secretion in cats show conclusively that camphoric acid acts as an anhidrotic by paralyzing the secretory nerves of the sweat glands.

Dr. Hare² also reports favourably of camphoric acid; he finds that 20 grains are usually sufficient to control sweating, provided the drug was given early enough to be absorbed before the time of the sweating was reached. As much as 60 grains may be given without deleterious effect. Dr. Hare has found camphoric acid of great value in the

treatment of idiopathic ptyalism, as it is sometimes met with in young children, as it controls the salivation without disordering the digestion.

Joquet³ recommends the **Tellurate of Sodium** in doses of $\frac{1}{3}$ to 1 grain per diem; larger doses give rise to digestive troubles. The drug may be given either in full or solution: 2 to 3 grains of the salt being dissolved in two ounces of 90 per cent. alcohol, and a small teaspoonful given night and morning in a little water. For persistent effect it is necessary to administer the drug for three consecutive days. The remedy is said to succeed in sixteen out of twenty cases of phthysical sweating, but it has the drawback of imparting a garlic-like odour to the breath.

Crystallized **Acetate of Lead**,⁴ given in doses of $1\frac{1}{2}$ grains daily in pill form, is said to have succeeded when other anhidrotics have failed. In a certain number of cases of tuberculosis the use of minute doses of **Pilocarpin**,⁵ such as $\frac{1}{80}$ to $\frac{1}{30}$ of a grain, seems to control the sweat, at the same time not increasing salivary flow or depressing the patient, as the drug so frequently does when administered in full doses. It is, therefore, a drug to be tried in cases which have resisted other methods of treatment. In addition to its hypnotic action, **Sulphonal**⁶ quiets the cough and checks the night sweats of phthisis; for this purpose 15 to 30 grains of the drug should be given every night.

Strychnin is often exceedingly useful in preventing night sweats. The usual doses may be given.

REFERENCES.—¹"Edin. Med. Journ.," Jan. 1897; ²"Therap. Gaz.," Mar. 15, 1897; ³"Brit. Med. Journ.," Epit., Nov. 21, 1896; ⁴"Med. Rec.," Nov. 7, 1896; ⁵"Therap. Gaz.," Nov. 16, 1896; ⁶Ibid., April 15, 1897.

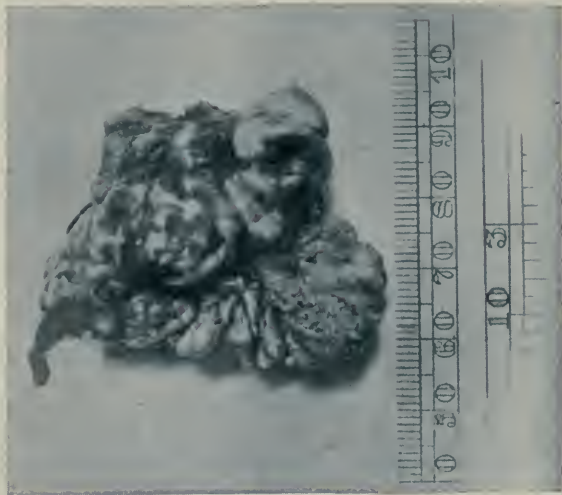
NOSE (Diseases of).

R. Lake, F.R.C.S.

Sinusitis.—The advance in surgical treatment of the diseases of the frontal sinus and the very large proportion of operations recorded, together with the high proportion of cases in which cerebral disease has been found from perforation of the inner wall, tempts one to look upon this condition as not infrequently due to the effect, more or less remote, of influenza; for frontal sinus operations are not of such recent date as this increase in cases. Collier, Luc, Ogsten and others have contributed to the completion of the technique of the operation, whilst Hebinger and others now advise the removal of the entire anterior or external wall. There is really nothing novel in the earlier steps of the operation, and it will not be described afresh.

According to Collier¹ there is no sinus before the age of seven years, and they are sometimes absent even in an extreme old age, that is to say, they sometimes fail to develop. The septum is central and con-

PLATE XIV.



Dr Milligan's case of Exostosis.

stant, and may or may not be complete. The sinus invariably communicates with the nose. The evolution of the sinus is not complete until the twenty-first year.

F. Fehleisen² lays great stress upon Kuhut's symptom, pain on pressure of the upper and inner orbital wall, and approves the method of Hebingen, of removing the anterior wall of the sinus and sometimes part of the inferior also; but the infundibulum is not reopened on account of the supposed risk of infection from the nose. Luc³ has had to operate as often as four times on a case. Botey⁴ found intra-cranial mischief in two out of three cases, and expresses the opinion that one should not delay operation. The external wound will heal if the opening into the middle meatus is of sufficient size, and if there is reason to suspect an intra-cranial lesion the posterior wall should be trephined and an examination made. Stoker⁵ reports a case cured by the **Oxygen** treatment in two months. Treitel⁶ reports a case of cerebral abscess due to neglected frontal empyema.

Fistulæ are found by R. Bois⁷ to be due to traumatism, inflammation, and surgical operations; escape of air on blowing the nose is a prominent symptom. Surgical treatment is the only available remedy. Luc⁸ operated on a case of spindle-celled sarcoma of this cavity and later had to open the cranium to evacuate an abscess of the brain. This was not discovered until two months later, and was attributed by the operator to infection at the first operation.

Exostosis.—W. Milligan⁹ showed a specimen of this unique growth, which he removed from a man of sixty-nine years. The growth, was found to have had its origin on the under surface of the orbital plate of the right superior maxilla. External operation is necessary to remove these or similarly situated growths of other natures (*Vide Plate XIV*).

Papilloma of Septum.—These if large require external incision. A. L. Turner¹⁰ in a case he reports, removed the mucous membrane around the base. The chief symptoms were those of pressure.

Diseases of the Lacrymal Duct, due to Nasal Disease, are fully investigated by Lubliner,¹¹ who, taking a paper by Kubli, of St. Petersburg, and cases collected by himself, obtained three hundred and four cases of lacrymal trouble, in only fourteen of which were the nasal passages healthy. In those presenting hypertrophic rhinitis the obstruction is mechanical, and should be treated surgically; in those due to infective disorders of the nose, as ozæna, they must be treated according to the recognized therapy for the special disorder.

Reflex Disturbances due to Nasal troubles—Asthenopia.—P. W. Maxwell¹² says that this complaint is frequently cured and often

alleviated by attention to the nose, the most frequent causes of obstruction being adenoids and posterior hypertrophies of the inferior turbinates; if, however, there are neither of these conditions present, but an abnormal mucosa, the hopes of cure are less. The indications are naturally free removal of the obstructing tissues.

Loss of Vision is noted by Hansell¹³ as a rare complication of ethmoidal suppuration.

Cough.—Blondian¹⁴ cured an obstinate cough, combined with discomfort in the throat, by removal of a large spur.

Paroxysmal sneezing at night, due to obstruction of the nasal passages, has been observed by Lepêtit,¹⁵ and which ceased to give trouble on removal of this obstruction by the usual methods. He ascribes the occurrence of the attacks at night to congestion due to the dorsal decubitus.

Spasmodic Dyspnoea, generally worse at night, with neuralgia and watering of the eyes, and dyspnoea with paroxysmal sneezing, have been reported by Blondian,¹⁶ the former removed by ablation of polypi, the latter by reduction of a large turbinal hypertrophy.

Hypertrophic Rhinitis.—N. H. Pierce,¹⁷ of Chicago, adopts the following modification of the usual method of applying **Chromic Acid**: After incising the mucosa, he separates it from the erectile tissue by means of a flat probe or spatula,^{*} and then inserts a probe with the acid fused on its tip.

Bryson-Delavan¹⁸ employs this method with success: He passes a fine needle-like knife along between the mucosa and bone of the turbinate, and by a sweeping movement divides all the vessels subcutaneously. When these heal, cicatricial contraction removes the previous engorgement.

Helot¹⁹ treats posterior hypertrophies of the inferior turbinate by means of **Electrolysis**. Long steel needles are used, and are passed along under the mucosa, but should not project into the nasopharynx. A current of 5 to 12 milliampères is used from ten to five minutes, according to the current, which is reversed during the séance to arrest bleeding.

Campo²⁰ uses 100 per cent. of **Resorcin** as originally suggested by Marage for adenoids, and is so impressed by its use that he declares there is no need for surgical measures. The duration of the treatment, two to four months, would be considered a little excessive.

In streptococcic rhinitis Boucherau²¹ advises the injection of 5 c.c. of **Ma:morek's Serum**, four to six doses usually curing.

L. S. Somers²² thus compares **Eucaïn** and **Cocain**. The latter produces anæsthesia in about five minutes, and it lasts upwards of

twenty minutes; eucain takes ten minutes to act, and lasts about the same time; it also produces hyperæmia, whilst cocain produces anæmia. Eucain keeps well, is less toxic, and is cheaper.

Nasal Hydrorrhœa.—StClair Thomson²³ showed a case in which there was a dropping of fluid from the nose which gave the reactions of cerebro-spinal fluid; whilst Mermoa,²⁴ in a similar case supposing the fluid, which was not examined, came from the frontal sinus, attempted operation through the nose; there was, however, *no* frontal sinus, and the calvaria was opened, the patient dying from meningitis; and besides the traumatic opening, another minute opening was found through which it was surmised the fluid escaped. That every case of hydrorrhœa nasalis, in which obvious cerebral complications are present, is due to a leakage of cerebro-spinal fluid, is not so, has been demonstrated by the writer, who in such a case had the fluid carefully analyzed, with a negative result.

Solutions of **Atropin** in the form of a spray are of benefit, though unfortunately frequently only temporarily so.

Syphilis.—Prof. Dionisio²⁵ shows that tertiary syphilis may exhibit itself in simple tumefaction of the mucosa, which may run its course without ulceration or suppuration.

McBride²⁶ reports a case of phagedenic ulceration commencing in the nose, which, despite all treatment, whether antisyphilitic or antiseptic, steadily extended, the patient dying of exhaustion. There was no history of syphilis. The writer saw a somewhat similar case, in which likewise there was no history. Antisyphilitic treatment was worse than useless, and the disease was only arrested by Zittmann's hot-air treatment, which is of such antiquity, one may say, that it is excusable to briefly give the essentials as quoted by Cooper.²⁷ The temperature of the room should be 80°F. The evening before commencing the treatment these pills are taken:—

℞ Hyd. Subchlor.	grs. ij	Ext. Hyosc.	grs. ij
Ext. Col. Co.	grs. v		
	Ft. Pil. duo.		

Decoc. :—

℞ Rad. Sarsæ Cont.	ʒiv	Sacchar. Alb.,	
Sem. Anisi,		Alum. Sulph.	āā ʒij
Sem. Fœniculi	āā grs. 50	Hyd. Subchlor.	grs. 50
Fol. Sennæ	ʒj	Hyd. Bisulph. Rub.	ʒxx
Rad. Glycyrrh. Cont.	ʒiv	Aquæ	cong. iij
Boil down to 1 gallon and strain. Sig.—Strong solution.			

To the remainder add:—

℞ Rad. Sarsæ Cont.	ʒij	Rad. Glyc.	āā ʒj
Cont. Lemon		Aquæ	cong. iij
Sem. Card.			

Boil down to 1 gallon and strain off. Sig.—Weak solution.

For the first four days, at 9 a.m., 10 a.m., 11 a.m., and 12 noon, $\frac{1}{2}$ a pint of the strong solution is given, very hot, and at the hours of 3 p.m., 4 p.m., 5 p.m., and 6 p.m., $\frac{1}{2}$ a pint of the weak is given, a reduction being made in the quantity as required. The course lasts fifteen days.

REFERENCES.—¹"Lancet," June 12, 1897; ²"Med. Rec.," Aug. 7, 1897; ³"Journ. of Laryng.," Sept., 1897; ⁴Ibid., Feb., 1897; ⁵Ibid., Oct., 1896; ⁶"Deut. med. Woch.," Nov. 19, 1896; ⁷"Thèse de Paris," 1896; ⁸"Arch. Intern. de Laryng., etc.," March and April, 1897; ⁹"Journ. of Laryng., etc.," Sept., 1897; ¹⁰"Arch. Otol.," April, 1897; ¹¹"Therap. Monats.," Dec., 1896; ¹²"Brit. Med. Journ.," Sept. 26, 1896; ¹³"Med. and Surg. Rep.," July 25, 1896; ¹⁴"Journ. of Laryng.," Dec., 1896; ¹⁵"Gaz. des Hôp. de Toulouse," 1 Mai, 1897; ¹⁶"Journ. of Laryng.," Dec., 1896; ¹⁷"New York Med. Journ.," No. 938, 1896; ¹⁸"Med. Rec.," May 22, 1897; ¹⁹"Arch. Inter. de Laryng.," etc., No. 2, Tome ix; ²⁰"Journ. of Laryng.," Feb., 1897; ²¹"Arch. Int. der Laryng.," etc., No. 6, Tome ix; ²²"Therap. Gaz.," Jan. 16, 1897; ²³"Journ. of Laryng.," Jan., 1897; ²⁴"Ann. des Mal. de l'Or, etc.," April, 1896; ²⁵"Gaz. Med. di Torind.," June 11, 1896; ²⁶"Journ. of Laryng.," Feb., 1897; ²⁷"Treatment," No. 3, 1897.

OBSTRUCTION OF INTESTINE. (See "Fæces.")

ŒDEMA (of the Lungs). *F. de Havilland Hall, M.D., F.R.C.P.*

Dr. MacGregor¹ has reported two cases in children treated with **Strophanthus**. In the first case, a boy aged seven years, suffering from chronic pleurisy and peritonitis, the œdema came on suddenly. The second case occurred in a girl aged nine years, the œdema coming on three weeks after the onset of an attack of scarlet fever. In both cases the action of strophanthus was rapid and satisfactory. The tincture was given in 2-minim doses every four hours in the first case and every three hours in the second.

REFERENCE.—¹"Lancet," Mar. 13, 1897.

OPHTHALMIA. (See "Conjunctiva.")

ORBIT (Dermoid Tumours of). *Wm. Oliver Moore, M.D., New York.*

Buller¹ thinks with the majority of authors that the small superficially situated cysts are easy of excision, but the larger growths that extend for an unknown depth within and beyond the proper limits of the orbit may have extensive adhesions to the walls of the orbit, to the ocular muscles, and even to the eye-ball itself, complications which may entirely *prohibit extirpation*.

For such he advises after opening the cysts and removing the contents, the introduction of **Silver Nitrate** in **Crystal** as far back as possible into the sac, which is then lightly packed with sterilized gauze and the whole then covered with a pad soaked in a solution of **Mercuric Perchloride**. Silver nitrate is used as it is a potent anti-

septic, self-limiting in its action, and sufficiently powerful to completely destroy the epithelial lining of the cyst, and thus leave the whole surface in a condition for complete adhesion and obliteration of the cavity. Perfect success has followed this treatment in a number of cases.

Standish² uses **Iodine** on cotton, swabbing out the sac, then packing it with cotton, with equally good results.

REFERENCES.—¹“Amer. Journ. Med. Sci.,” April, 1897; ²“Trans. Amer. Ophth. Soc.,” 1896.

OVARIAN CYSTS.

Priestley Leech, M.D., F.R.C.S.

Treatment of Ovarian Cysts communicating with the Rectum.—Mr. Harrison Cripps¹ relates a very instructive case where an ovarian cyst, lying between the layers of the broad ligament, opened into the rectum by extension of intra-cystic disease. The tumour was removed and at the bottom of the sac there was an opening into the rectum nearly an inch in diameter. The hole was closed by four sutures, but not feeling confident of the security of the stitches he decided to drain the sac by the vagina. A knife guarded by the forefinger was introduced into the vagina and passed behind the cervix through the vaginal roof into the empty broad ligament sac, the amount of tissue traversed between the vagina and the sac being nearly two inches. A long pair of forceps was substituted for the knife and an india-rubber tube, a quarter of an inch in diameter, was drawn from the sac through the opening into the vagina, about half an inch of tube projecting into the sac and an inch into the vagina. The sac was closed with interrupted silk sutures and the abdomen closed. After four days some fæcal material came through the tube, but the amount gradually lessened and on the seventeenth day the tube came out and could not be re-introduced.

REFERENCE.—¹“Brit. Med. Journ.,” Jan. 2, 1897.

OVARIES (Removal of). *Theophilus Parvin, M.D., Philadelphia.*

Experiments were carried out by Cohan¹ to determine the effect of castration on the uterine mucous membrane. He removed the ovaries of bitches, and among his conclusions are the following: The invariable consequence is atrophy of the uterus. The atrophy affects the mucous membrane, and is similar to that which occurs at the climacteric. The pure form of senile atrophy of the uterine mucous membrane is not identical with atrophic endometritis. The causes are unknown. The ligation of the tubes, or of the spermatic arteries, is here of no significance. From an anatomical view, castration finds its expression in changes in the uterine blood-vessels.

Perrier² read before the Academy of Medicine, Paris, a report by Mouchez, of Sens, of removal of both ovaries for cystic disease in a woman three months pregnant. The patient was delivered at the normal period of a living child. Mouchez urged that this practice should be followed in all similar cases, the danger of operation being less than letting the pregnancy continue.

Dr. J. Stinson,³ of San Francisco, reports a case in which he removed a tubo-ovarian abscess on one side, and an ovarian cyst with the tube on the other side, by the process of enucleation. Abdominal incision of three and three-fourths inches, was followed by separating omental and intestinal adhesions, this separation being made by blunt dissection, aided by occasional cuts with scalpel, and a tubo-ovarian abscess was exposed. During this separation the sac ruptured, and half a pint of cream-like, chocolate-coloured fluid escaped; pitcherful after pitcherful of hot water was poured in until the fluid came away clear. Then the enucleation was continued as far inward as the cornu of the uterus, and the mass separated flush with the uterine wall. On the other side a tumour of the ovary the size of a small orange was found; tube and ovary were separated from adhesions by blunt dissection, and when the uterine end of the tube was reached, its serosa, one-fourth of an inch from the uterus, was divided circularly, and dissected back to the uterus, and the tube was then cut off; the cut edges of the tubal serous membrane, which had been dissected back, were united by a continuous catgut suture. The author asserts, among his conclusions, that with enucleation the danger of injuring the surrounding structures is slight, recovery is rapid, and the danger of sepsis is reduced to a minimum.

REFERENCES.—¹"Centralbl. f. Gynäkol.," Aug. 14; ²"Brit. Med. Journ.;" ³"New York Med. Rec." Feb. 13, 1897.

OZÆNA.

R. Lake, F.R.C.S.

Capart¹ thus describes the changes which are found in this complaint: Atrophy of the nasal mucosa is found especially marked in the inferior turbinate, and generally accompanied by a hypertrophy of the middle turbinate; formation of crusts and characteristic odour; there is no ulceration and no necrosis. He quotes Zaufal's opinion that the ventilation of the nose is anatomically bad, and Hofmann that the nasal cavities are too short and too high. These factors he discredits as he does Berliner's of the influence of middle turbinal hypertrophy as the etiological factor, and he does not attach much value to the microbic theory of Lewenberg or Massei. He briefly details the known marked anatomy, and alludes to Walb's theory that the atrophy is caused by the pressure of the crusts on the

glands. And finally he leaves us with the question, Is it not rather mal-nutrition—so-called scrofula, than a trophoneurosis.

Auché and Brindel² have made very careful bacteriological investigations in twenty-four cases. Lœwenberg's diplo-bacillus was present in all cases with ozæna present or not. It was never found in cases apparently cured. The pseudo-diphtheria bacillus was present in eighteen out of twenty cases of atrophic rhinitis, absent in two cases with ozæna, and present in two out of four nearly cured cases. The small bacillus of Pes and Gradenigo was present in three out of twenty ozænas. Electrolysis did not influence the presence of bacilli.

TREATMENT.—North³ advocates a course of treatment which consists in removal of all crusts by the use of a medicated douche, and after its use by freely laving the part with **Vaseline** mixed with **Resorcin** dissolved in glycerin or vaseline with 10 drops of **Campho-Menthol** and 5 of **Eucalyptol** to the ounce. When crusts have ceased to form, a solution of **Trichloroacetic Acid** is applied (1 per cent. to 5 per cent.), according to the requirements of the case; vaseline and resorcin being used as a protective medium; whilst Porcher⁴ used the following mixture with good effect when plugged between the upper turbinate and roof: **Pot. Iod.** ʒijss; **Iodine**, gr. 40; **Glycerin**, ʒj.

It will be disappointing to those of our readers who do not already know that competent observers, as Arslau and Catterina, do not confirm the wonderful results obtained by Belfanti and Della Vedova by the injection of **Antitoxin**; and Vausant⁵ in one hundred cases in examining for the Klebs-Lœffler bacillus found these and other bacilli in twenty-six cases, of which eleven were atrophic. He attributes the presence of these bacilli to infection, the pathological state of the nose providing favourable conditions for their growth. Seiss⁶ upholds the **Massage** treatment by means of a probe sheathed in wool. He also employs the **Faradic Current**, the + pole for the nasal work, and the — on the neck.

Grünwald and Sachs⁷ both have noted great improvement in this disease after removal of adenoids.

Armstrong treats this very obstinate disease by means of the following unguent which is applied by means of an oil atomizer three or four times daily after thorough cleansing:—

R. Powdered Thiol	gr. x	Liquid Blancolin	ʒj
Menthol	gr. v		

Carpart⁸ has obtained truly striking results with bi-polar **Electrolysis**. He says one should always cure 90 per cent. of ozænas. He recommends a current of 20 milliamperes for twenty minutes at each sitting, copper needles being used, and inserted into the sub-mucous tissue.

Ichthyol is recommended by Ertler⁹ who first washes out all crusts with a 2 to 5 per cent. solution, and then swabs out the nasal cavities with a 25 to 30 per cent. solution. This treatment is useful in cases with or without ozæna. Mouret¹⁰ gives alkalis, especially **Sod. Bicarb.**, internally, believing they influence favourably the glandular secretions.

REFERENCES.—¹"Journ. Laryng.," Dec. 1896; ²Ibid., Sept. 1897; ³"Med. Rec.," Jan. 2, 1897; ⁴"Trans. South Carol. Med. Assoc.," April, 1896; ⁵"Journ. Amer. Med. Assoc.," Feb. 27, 1897; ⁶"Med. News," Nov. 28, 1896; ⁷"Journ. Laryng.," May, 1897; ⁸Ibid., Dec., 1896; ⁹"Wien. med. Presse," xxxvii. 1896; ¹⁰"Journ. of Laryng.," Sept., 1897.

PARALYSIS (*Acute Ascending*).

Græme M. Hammond, M.D., New York.

Thomas,¹ of Boston, reports two cases of this interesting disease in both of which autopsies were secured. In the first case the paralysis appeared suddenly in the legs, and was complete by the next day. The legs felt numb and dead, and were somewhat painful to pressure. There was retention of urine. The reflexes were absent, but sensation was not affected. The arms then became paretic; there was dyspnœa and finally broncho-pneumonia. The patient died in nineteen days. The microscopic examination of the cord showed acute inflammatory exudation in the anterior horns, with parenchymatous degeneration of the nerve cells and processes; infiltration of the perivascular lymph spaces and dilatation of the vessels of the anterior horns; moderate infiltration about the vessels in the posterior horns and of the white matter of the cord; slight parenchymatous degeneration of the nerve fibres of the white matter; slight degeneration of the posterior nerve roots and marked degeneration of the anterior nerve roots; parenchymatous degeneration and perivascular infiltration of the peripheral nerves.

In the second case the disease began in the legs also, extended to the arms, and then to the muscles of the neck. The tendon reflexes were lost. Sensation was normal. The patient died in an attack of dyspnœa. The microscopical examination showed similar changes in the cord to those already described.

The author concludes that acute ascending paralysis is a clinical collection of symptoms arising from an affection of the primary motor neuron, probably toxic in nature (but not due to a distinct micro-organism), which varies in character in different cases, consisting in the milder forms of a degeneration of the motor cells and processes with disappearance of the chromophilic granules of protoplasm and loss of the nucleus and nucleolus; and in the severer forms amounting

to an acute inflammatory process of the anterior horns with infiltration of the perivascular lymph spaces and degeneration of the motor cells and processes.

REFERENCE.—¹ "Journ. Nerv. and Ment. Dis.," Nov., 1897.

PARALYSIS AGITANS. *Græme M. Hammond, M.D., New York.*

Dr. Charles Prentiss¹ reports three cases of paralysis agitans in which the tremor was almost immediately arrested by dropping into each eye 1 drop of a solution of the **Hydrobromate of Hyoscyamin**. The solution was made by dissolving 1 grain of the alkaloid in 1 oz. of water, and the remedy was administered once daily. Dr. Prentiss advances the theory that "the local application is in close proximity to the cause of some reflex disturbance through the visual and other allied centres." It is more probable, however, that the rapid and complete absorption of the remedy into the general circulation is the only reason.

Berger² relates two cases in which he successfully employed **Picrotoxin**. The dose is not stated.

The "Journ. des Praticiens"³ states that the **Sulphate of Duboisin** has been employed by Mendel and Francotte with considerable success as a sedative in the treatment of paralysis agitans. From 3 to 5 granules, containing $\frac{1}{200}$ of a grain each of duboisin, may be given each day; or hypodermic injections of $\frac{1}{300}$ of a grain.

The following prescription is given in the "Medical Record"⁴ :—

R	Strychniæ Sulphat.	gr. j	Quininæ Sulphat.	℥ij
	Acid. Arseniosi	gr. j	Pil. Ferri Carbonat.	℥ij
	Ext. Belladonnæ	gr. v	Ext. Taraxaci	℥j
M. et ft. pil. No. 90. Sig.—One pill three times a day.				

REFERENCES.—¹ "New York Med. Journ.," Jan. 2, 1897; ² "Ind. Lancet," Feb. 1, 1897; ³ "Therap. Gaz.," Sept. 15, 1896; ⁴ "Med. Rec.," Oct. 21, 1896.

PARALYSIS (General). (See "Insanity.")

PARANGI.

James Cantlie, F.R.C.S.

Dr. Attygalle¹ draws attention to this disease as it is met with in Ceylon. He points out that 'parangi' is a corruption of 'ferange,' the name by which all Europeans are known in India. The name parangi included at one time such diseases as leprosy, syphilis, and many varieties of skin diseases. The disease, like leprosy, does not appear before the second or third year, but, like leprosy also, may commence at any subsequent age. It would seem to be an inoculation from a simple scratch of infective material from some person suffering from parangi. The initial sore attains characteristic signs, and it is accom-

panied by an infective eruption of first papules, then pustules and tubercles varying in size from a pea to a walnut. These come in crops on legs, arms, nates, face and the sides of the chest and abdomen. The pustules burst, attain a rupia-like scab, and when these drop off a raw ulcerative surface remains. Nodes breaking down into indolent ulcers succeed, and a whole limb may be involved, part of which is cicatrizing, part breaking down in extending ulcers. Pain, mostly nocturnal, of an excruciating character, almost invariably co-exists with the ulcerative stage of the disease. The patient, unless treated wisely, will go from bad to worse—nodes terminating in caries of the bones of the nose, palate, etc., with loss of sensibility and gangrene of the fingers and toes. The general health suffers, and the patient will succumb to diarrhoea or pneumonia. The disease appears to be highly contagious, and it would seem as though a real inoculation were necessary for transmission of the disease.

The treatment is removal from infected quarters, good food, and attention to sanitary welfare. The disease in well-treated cases disappears in a few months, leaving the patient apparently well. Should, however, the person return to previously infected habitations, a relapse will occur.

REFERENCE.—¹“Ind. Lancet,” Feb. 18, 1897.

PARESIS (General). *Græme M. Hammond, M.D., New York.*

Allen¹ mentions the following symptoms which are the earliest to occur in paralytic dementia. The first mental phenomena are either (1,) A simple feeling of well-being (euphoria); or (2,) Exaltation with delusions of grandeur (of great wealth, or superhuman bodily strength or mental ability, of enormous sexual power, etc.); or (3,) Simple maniacal excitement; or (4,) Depression with melancholic or hypochondriacal delusions. Of these the second is the most frequent and characteristic. The greatest danger arises from the combination of euphoria with grand delusions, which may lead the patient to commit violent acts, which are usually perpetrated with an utter recklessness and lack of appreciation of consequences.

There may be loss of sense of smell, and tingling and numbness over limited areas. These symptoms usually disappear for a time and then reappear again. The most important early symptoms are the unequal size and altered reaction of the pupils, diminution or loss of the reflexes, particularly of the knee-jerk, disturbance of speech and handwriting, parietic seizures, and muscular twitchings and tremors. The pupils fail to react to light, while the reaction for accommodation can readily be obtained.

The diagnosis between cerebral syphilis, chronic alcoholism, and paralytic dementia is usually difficult. For the first, the evidences of comparatively recent syphilis, great irregularity and rapid development of the symptoms, and improvement under treatment speak favourably.

Francotte² has injected, once or twice in twenty-four hours, a solution of **Sulphate of Duboisin**, 4 to 1,000, as a means to induce patients with general paralysis to take food, and has found it successful in four cases.

REFERENCES.—¹ "Amer. Med. and Surg. Bull.," Feb. 25, 1897;
² "Med. Rec.," Sept. 26, 1897.

PEMPHIGUS.

T. Colcott Fox, M.B.

Lewis H. Miller¹ describes in a man, aged seventy-two years, a case of *pemphigus chronicus vulgaris*, affecting for over twenty months only the mucous membrane lining, the oral cavity, and covering the epiglottis. The eruption gained the posterior wall of the pharynx and trachea, but not the skin. There was a history of attacks of rheumatism, acute, subacute, and chronic. The diagnosis in such cases may be very difficult. Here the eruption presented as patches of what appeared to be false membrane of opaque milky appearance and considerable thickness, easily stripping off and leaving a new bleeding surface. After prolonged observation the initial bleb appearance was detected, which rapidly settled down into the patches described. The author collects a number of cases in which pemphigus began in the mouth. Very few remained so long localized, but one record gives a duration of eleven years.

The possibility of this long-continued localization of pemphigus is not sufficiently recognized. The conjunctiva may be thus affected. K. Herxheimer² showed a case of a patient, aged seventy-two years, with pemphigus localized to the larynx and penis. Kaposi³ says it is known that pemphigus can remain localized to one half the body or the backs of the hands, for months and even years, and he showed a man in whom bullæ had evolved on the back of the right foot for three months. He also recalled a case where it began on the scalp and simulated for a time impetiginous eczema. Neumann corroborated these facts as regards the backs of the hands.

J. Hutchinson⁴ says he became from the year 1852 impressed with the fact that **Arsenic** might really be claimed as almost a specific for pemphigus. The type of case on which he founded his experience is rarely seen now, however, as a chronic disease, for the very reason that it is readily cured. The chronic cases of pemphigus now seen are

complicated ones, which deviate more or less from the type, or are representations of a very small minority which resist arsenic.

REFERENCES.—“New York Med. Journ.,” July 3, 1897; “Cong. Ger. Phys.,” Sept. 1896; ³“Ann. de derm. et de Syph.,” Jan., 1897; “Archiv. of Surg.,” April, 1897.

PERICARDITIS.

Henry Handford, M.D.

Under this heading Dr. Ewart¹ describes three cases which he likens to the cases of “Quiet Pleurisy with Effusion,” so well described by Professor Clifford Allbutt, in which effusion takes place by degrees and without any pain or initial severity of symptoms, the patient ultimately seeking advice in connection with anæmia and incapacity for exertion at a time when the fluid has already accumulated to a considerable extent. That pericarditis also occurs in a latent way is anatomically demonstrated by the agglutinations, bands of adhesions, thickenings, and fibrinous deposits found after death in the pericardium of those in whose history there is no record of pericarditis.

The effusions may occur in the pericardium independently of acute pericarditis, under the influence of rheumatism, of cardiac affections, of Bright's disease, etc. If of moderate size they may be capable of rapid re-absorption; and in that case, not attracting attention either by the painful symptoms of pericarditis or by the pressure symptoms of fluid, they may run their course unobserved. As in the case of the analogous pleural effusions they may be dependent upon a sub-acute inflammatory process. More often they are probably passive, or mechanically induced. **Rest** and **Diet**, and the administration of **Cathartics**, of **Diaphoretics**, and of **Diuretics**, are the only treatment needed in the average case. In some cases, which are usually those of advanced kidney disease, the effusion as it steadily increases becomes obvious, and **Paracentesis** may become necessary. The most important practical conclusion is that our physical examination should be accurate and searching, and that in all cases of enlarged præcordial dulness the simple tests for the presence of pericardial fluid should be thoroughly applied.

REFERENCE.—¹“Lancet,” Nov. 21, 1896.

PERICARDITIS (Suppurative). *Priestley Leech, M.D., F.R.C.S.*

Treatment by resection of the sixth rib and drainage.—Mr. H. Betham Robinson¹ records a very interesting case.

The patient was a lad sixteen years old. The area of cardiac dulness was much increased, both upwards and laterally, to the mid-axillary line, but the left lung gave no evidence of fluid posteriorly. Aspiration in the fifth interspace, just behind the anterior axillary line,

was performed and a little pus obtained. With the trocar puncture, as a guide, the sixth rib was resected and the left pleura opened ; the lung was fixed by recent adhesions. The bulging pericardium was incised and pus welled out freely. On introducing the finger, all fibrinous coagula were cleared out as far as possible. Over two quarts of pus were evacuated ; irrigation was decided against owing to the patient's feeble condition. A large drainage tube was introduced into the pericardium and it was stitched to the margin of the wound.

Recovery was slow but uninterrupted ; the tube was removed on the sixty-first day. At no time was there any collection of pus in the left pleura. Mr. Robinson referred to the very few cases recorded, but they showed a large proportion of successes—five out of eight.

REFERENCE.—¹ "Brit. Med. Journ.," p. 1,504, vol. ii., 1896.

PERITONITIS (General Septic). *Priestley Leech, M.D., F.R.C.S.*

TREATMENT.—Dr. Andrew McCosh¹ has operated on forty-three cases of general septic peritonitis, of which thirty-seven died and six have recovered—a mortality of 86 per cent.

Various methods have been employed. He believes that the safety of these patients depends upon the restoration of their peristaltic action to the intestines, thus increasing intestinal drainage and diminishing the emigration of colon bacilli through the walls of the intestine. Opium should not be employed except in hopeless cases, or exceptionally for the relief of very acute pain. The hopelessness of these cases depends on their inability to retain cathartics when administered by the mouth, and their administration by the rectum appears valueless. For these reasons McCosh began to employ the intra-intestinal injection of **Sulphate of Magnesia** and other cathartics. Within the last eighteen months he has been convinced of the great value of this procedure, and has employed it in almost all his operations on cases of general septic peritonitis. Since the adoption of this treatment the results have been much more favourable than those of former years. Out of eight cases operated on from January 1, 1896, to March, 1897, five have recovered, one died as a direct result of the peritonitis, one died from lung complications five weeks after operation, and one is still in hospital convalescing. Even taking into consideration that the cases may have been more favourable, he still thinks that a large share in the success should be attributed to the intra-intestinal injection of sulphate of magnesia. In six of these cases the cause of peritonitis was a gangrenous appendix, in one a perforating gastric ulcer, and in one a septic uterus.

The plan of treatment employed, in general, was as follows : (1.)

Chloroform as the anæsthetic ; (2,) Free incision, five or six inches, in the abdominal wall, its site varying according to the organ affected ; the purulent fluid is allowed to flow out, its escape being often aided by turning the patient on the side ; (3,) As a rule the intestines are turned out of the abdomen and received into hot towels held in the hands of assistants ; this is done where possible. If the distension is such that their return is prevented the ileum is opened and gas and fæces allowed to escape, the opening being closed by Lembert sutures ; (4,) The cause of the peritonitis is removed ; appendix or tumour removed : a perforation sutured ; (5,) The intestines and the cavity of the peritoneum are thoroughly irrigated with hot normal saline solution at a temperature of 110° to 112° F. Irrigation is preferred to the swabbing of the intestines with sponges or gauze pads. A considerable amount of salt solution is allowed to remain in the abdominal cavity for the purpose both of stimulating the heart and of favouring intestinal drainage. The intestines, if they have been turned out of the abdomen, are irrigated by pouring the solution over them by means of flasks, and at the same time the abdominal cavity is washed by irrigation from a three-gallon jar through a soft rubber tube ; (6,) Sulphate of magnesia is injected through a hollow needle attached to a large aspirating syringe into the small intestine, a point in the jejunum or in the ileum, as high up as possible being selected. A saturated solution containing between one and two ounces of the salt is used. The needle puncture is closed by a Lembert suture ; (7,) The peritoneal cavity is drained generally by four or more strips of sterile gauze thrust in different directions among the intestines. At times a glass tube is inserted into the pelvis. Strips of rubber tissue may be used ; (8,) The abdominal wound is but partially closed by sutures. The edges are not closely approximated but are generally drawn together by two or three silkworm-gut sutures, between which, and the intestines, is placed a compress of gauze. A wound which gapes somewhat affords free exit for the escape of the peritoneal secretions ; (9,) A 10-grain dose of **Calomel** is given after the patient has been removed to bed. Rectal stimulation is employed during the first twenty-four or thirty-six hours.

REFERENCE.—¹ "Annals of Surgery," June, 1897.

PERTUSSIS.

Henry Dwight Chapin, M.D., New York.

Dr. Eross¹ got good results with the insufflation of **Resina Benjols**, which was followed by a marked improvement in the severity of the paroxysms, with a shortening of the course. Antipyrin, antifebrin, and phenacetin, in syrup, coffee, or water, were also employed. No

prostration followed the coal tar preparations. Antipyrin gave the most favourable results. In convulsive attacks, **Bromoform** produced an immediate change for the better.

Dr. Rehn² finds that **Tussol** exerts a rapid and favourable influence in controlling the worst symptoms of pertussis. The duration of the attacks under its use ranged from three to five weeks. The dosage was: one year, 0·05 to 0·10; two to three years, 0·10; 3 to 5 years, 0·25 to 0·50, administered in solution flavoured with syrup of orange.

Dr. C. G. Kerley³ gets the best results from a combination of **Antipyrin** and **Bromide of Soda**. For a child of eight months, $\frac{1}{2}$ grain of antipyrin with 2 grains of sodium bromide every two hours. For fifteen months, 1 grain of antipyrin with $2\frac{1}{2}$ grains of sodium bromide, and for two and one-half to four years, 2 grains of antipyrin with 2 or 3 grains of sodium bromide every two hours. Bromoform proved to be of little service. **Quinine** in children over two years does well if given in large doses.

Dr. Doumer⁴ has treated a number of cases with an **Inhalation of Ozone** for ten to fifteen minutes twice daily. In all of them, there was diminution both in the frequency and severity of the paroxysms from the second day, discontinuance of the inhalations, however, being always followed by a relapse. A cure was effected after twelve to twenty-seven inhalations—that is, in nine to fifteen days.

Dr. Roskam⁵ has treated a large number of children by the method introduced by Moncorvo, namely, by applications of a 2 to 3 per cent. solution of **Resorcin** to the glottis with a fine sponge. The theory of the treatment is that the disease is due to a micro-organism, and affects primarily the larynx.

Dr. Maestro⁶ has administered **Ichthyol** in pill-form in progressively increasing doses. From $\frac{3}{4}$ gr. to 3 grs. were thus administered daily, the dose being rapidly increased to 9 or 15 grains in the twenty-four hours. Inhalations of a 3 per cent. solution of ichthyol in glycerin were employed in some cases.

REFERENCES.—“Jahrb. f. Kinderh.,” B. xlii, H. iii, iv; ²Ibid.; ³“New York Polyclin.,” vol. viii, No. 2, 1896; ⁴“Nord méd.,” No. 50, 1896; ⁵“Ann. de la Soc. méd. Chir. de Liège,” Feb. 1897; ⁶“Sem. méd.,” No. 38, 1896.

PHARYNX (Disorders of).

R. Lake, F.R.C.S.

Chronic Naso-pharyngitis—Causation—C. H. Knight¹ draws attention to the benefit which accrues from removal of septal deviations, ridges, spurs, etc. Not that he excludes other forms of nasal obstruction, but septal errors seem to have somewhat escaped detection.

The following solutions² are advocated for use in this disorder :—

- | | | | | |
|--------|--|--------|--------------------|----------|
| (a.) R | Sod. Bicarb. | | Sod. Chloro. | āā gr. j |
| | Sod. Bibor. | | Sach. Alb. | grs. 36 |
| | Dissolve in a wineglassful of water (hot). | | | |
| (b.) R | Alpha Naphthol | gr. 45 | Alcohol | ℥i0 |
| | A teaspoonful to a quart of boiled water. | | | |
| (c.) R | Liquid Vaseline | ℥ss | Resorcin | |
| | Salol | | Bismuth Salycilas. | aa ʒi |
| | | | M. | |

Naso-pharyngeal Polypus.—A new method of removal through the mouth is brought forward by H. Gaudier,³ who thus details the operation: After having ascertained that the polyp hangs free into the naso-pharynx, and its origin located, the patient is seated with the mouth wide open, and one stands opposite him; a curette (the patterns of Moritz-Schmidt or Lemoyez are recommended) is introduced as in the removal of adenoid vegetations, passing the blade of the curette between the polyp and the choanæ; the polyp is then secured at its base and removed. If the polyp is small, and the opening in the instrument large, this is very simple; but if the polyp is too large, it is pressed backwards and the stretched pedicle severed. Cocain may be used, or, as the author prefers, menthol in oil 1 per cent.

Retro-pharyngeal Abscess.—The general opinion now appears to be in favour of the theory of Neumann that these abscesses are simply a suppurative lymphadenitis of the retro-pharyngeal glands of Henle. The fact that other glands in the neck are often simultaneously affected, is urged by Oppenheimer,⁴ as supporting this contention; he also adduces proof of the probability of the infection at times coming from catarrhal conditions of the nose, and even from otitis media suppurativa, by direct entry of bacilli through mucous membrane of the pharynx. Haber,⁵ who agrees with these views, notes the fact that pus may burrow to the angle of the jaw, or even discharge itself through the external meatus, and recommends opening the abscess with forceps to avoid hæmorrhage.

Chronic Pharyngitis.—Price-Brown,⁶ of Toronto, under the title of "Clergyman's Sore Throat," details a series of cases in which clergymen had more or less loss of voice, which with one exception proved due to nasal obstruction of greater or less extent, and which were cured by attention to this—a further testimony of Bosworth's dictum that 'laryngeal catarrhs were almost invariably secondary.'

Tonsil.—Gumma of this gland is not common, but E. Michels reports a case in which the left side of the pharynx was almost filled

with a smooth globular tumour, almost black. For ease in examination chloroform was given, and the finger passed below and behind. The mass came away. This gangrene of the tonsil appears to be of great rarity, and also to be due to syphilis, and demands the usual remedies.

Follicular Tonsillitis.—As is well known this disease is badly named, for it is the crypts, and not the follicles, which are the seat of disease. Almost every known pathogenic microbe has at one time or another been found in the crypts when the gland has been inflamed, and one would naturally expect this to be the case in the first lymphoid mass in the alimentary tract. The importance of local treatment is now fully recognized.

TREATMENT.—Levy⁷ recommends **Creasote** as a gargle, in conjunction with **Tincture of Myrrh** and **Glycerin**.

Prevention of this disease when occurring in an epidemic form is said by Maxson⁸ to be accomplished by the combined use of mild antiseptic gargles, and the internal administration of **Benzoate of Soda**. Kramer⁹ uses an intestinal injection of **Carbolic Acid**—9 minims of a 2 to 3 per cent. solution two or three times a week.

Grey-Edwards and Severn¹⁰ have traced an epidemic of this complaint to milk, the affected tonsils showing the same microbe that existed in the milk from a cow which supplied milk to the families having the disease.

Acute Ulcerative Tonsillitis.—Lake¹¹ thus describes the microscopical appearances of this disease: "Large masses of beaded bacilli are situated in the advancing edge of the slough; in the older slough they are more rare." This is altogether more in accordance with our views of pathology than the opinion of Moure, that the ulceration was a purely inflammatory condition. The best treatment is to remove as much of the tonsil as possible, cutting well below the floor of the ulcer and then using freely to the cut surface some such antiseptic and escharotic as **Iodized Phenol**.

Tuberculosis of Tonsils.—Gross or macroscopic tubercular ulceration of the tonsil is practically unknown, and probably for that reason the question of tuberculosis of the tonsils has not been investigated earlier. Ruge,¹² however, has written on the subject, and quoted cases which go a long way to show that some cases of cervical caries seem to have been secondary to a primary tonsillar infection, and he gives five ways in which they may be affected, viz.: Through the blood, through the lymph, from sputum, air, or food. It has been a matter of common observation, that cervical adenitis in children and young adults is commonly associated with hypertrophy of either the faucial and

pharyngeal tonsils, for certainly in this country at least these are generally affected together, but we had to learn that these glands were themselves affected. In these cases the ordinary operation of tonsillotomy is not sufficiently radical. They should be removed entirely, by means of an *écraseur*, or shelled out by the finger.

REFERENCES.—¹ "Laryng.," April, 1897; ² *Journ. des Prat.*," April 11, 1896; ³ *L'Echo méd. du Nord.*," May 6, 1897; ⁴ "Arch. f. Kinderheilk. Hft." 3 to 6, Bd. xxii.; ⁵ "Arch. Ped.," June, 1897; ⁶ "Amer. Med. and Surg. Bull.," Oct. 3, 1896; ⁷ "Sem. méd.," Sep. 23, 1896; ⁸ "Journ. of Pract. Med.," Dec., 1896; ⁹ "Cent. fur. Chir.," Nov. 21, 1896; ¹⁰ "Lancet," July 12, 1897; ¹¹ "Journ. Laryng.," Aug., 1897; ¹² "Arch. für. Laryng.," ("Amer. Med. Surg. Bull.," Oct. 10, 1896.)

PHLEBITIS.

Priestley Leech, M.D., F.R.C.S.

TREATMENT—The following anodyne preparations are recommended:—¹

R	Ext. of Belladonna,		Benzoated Lard	3j
	Ext. of Hyoscyamus āā	30 grs.		
Or,	Chloroform	5ij	Glycerin	5iv
	Camphor Lin.	5ij		
Or,	Ichthycl	15 grs.	Lanolin	3j

REFERENCE.—¹ "Therap. Gaz.," Sept. 15, 1895.

PHTHISIS.

F. de Havilland Hall, M.D., M.R.C.P.

There are signs that public opinion will soon be ripe for taking some decisive steps in regard to the prevention of tuberculosis, and the subject is receiving the consideration of physicians and others in all parts of the world. Many important facts were elicited in the discussion on tuberculosis at the meeting of the British Medical Association at Carlisle, in 1896.¹ Though there has been a steady fall in the mortality from tuberculous affections of late years in the British Isles, from one-eighth to one-seventh of all deaths are still due to tuberculosis. One of the first steps to be taken is the careful supervision of cattle, as it is stated that about 25 per cent. are affected with tuberculosis.² The time has not yet arrived when it would be feasible to exterminate all tuberculous cattle; until this is done it is important that milk should be boiled before being used, and meat should be well cooked. Another most important step would be the erection of sanatoria for the reception of early cases of tuberculous phthisis. This I advocated at the Carlisle meeting, and I pointed out that though the cost would be very great, the community would eventually repay itself by the diminished death-rate from tuberculous

affections. The ordinary general hospital is altogether an unsuitable place for the consumptive, and he is a positive source of danger to the other patients. The inmates of our medical wards are naturally not in the best of health, and they are therefore liable to become infected by tuberculosis.

Dr. Knopf,³ who has visited the sanatoria both of Europe and America, recommends the large pavilion system. Three two-story pavilions, each accommodating twenty-five patients, are united by covered galleries one hundred feet long, which serve on rainy days as promenades.

"Behind the middle pavilion are situated the dining-room, kitchen, administration building, winter garden, etc., all united by galleries. At some distance from the main structures are a recreation pavilion, a house for visitors, and a place for isolation. Each main pavilion is about one hundred and thirty-five feet long, has twenty-five large well-ventilated rooms, also bathrooms, sitting-rooms, and parlours. In the basement are the hydro-therapeutic appliances. In front of each pavilion, along its entire length, is a veranda twelve feet wide, where the patients take their rest cure on their comfortable steamer chairs or lounges. Besides the ordinary hygienic precautions in regard to plumbing, heating, water supply, etc., all angles throughout the house are rounded to prevent the accumulation of dust. The walls are painted, that they may be easily disinfected; the floors are of hard wood, that they may be easily mopped, as sweeping or raising dust is absolutely forbidden in a well-conducted sanatorium.

"One of the main features in regard to individual prophylaxis is the care taken with the expectoration and other secretions which might contain the bacilli. At the admission of the patient he is instructed that to expectorate anywhere except in a proper receptacle means danger to him and danger to others, for he may reinfect himself and communicate the disease to any number of other persons through the inhalation of the germs contained in the dried particles of his sputum carelessly deposited here and there."

One of the best forms of spittoon is that devised by Dettweiler (*Fig. 63*). It is a pocket flask about four inches long and six inches in its largest circumference. It is provided with a hermetically closing top and bottom, and is so



Fig. 63.—Dettweiler's Pocket Spittoon.

constructed as to be easily cleaned. The touch of a spring causes the top to fly open to receive the intended deposit, and pressure of the lid causes it to close again with a snap. It would be perfection but that it is of glass and breakable, somewhat large and heavy, and its sharp protruding spring protector might cause an inoculation of the thumb. All these trifling disadvantages may be overcome by having a spittoon made entirely of aluminium, which weighs only three ounces instead of six ounces with nearly the same cubical contents.

All spittoons should be covered when not in use.

The experiments of Spillman and Haushalter have demonstrated beyond doubt the dissemination of the bacilli by flies. Patients in bed too weak to make use of the ordinary hand cup should be provided with moist rags, which should be burned immediately after use.

I have found cloths made of Japanese paper answer this purpose very well. In order to prevent tuberculosis of the intestines, patients should be cautioned against swallowing sputa.

The expectoration by tuberculous persons in public places, conveyances, and generally anywhere except in receptacles provided for the purpose, should be strictly prohibited, as the dried sputa is a very effective way of conveying infection.⁴

As regards individual prevention, the four chief measures are a free supply of sunlight, fresh air, wholesome food, and exercise. The more perfect the general health of the individual, the greater is his power of resistance against the tubercle bacillus, which seems to be pretty nearly ubiquitous. Attention to the condition of the skin and suitable clothing are important.

When called upon to treat a case of tuberculosis, we must realize that there is no individual therapeutic agent from any source that will reach satisfactorily every case, irrespective of class, stage, and complications. Every case of tuberculosis must therefore be treated with a wise eclecticism, and it must always be borne in mind that any plan of treatment which upsets the digestion and diminishes the patient's appetite, is to be at once discarded; hence cod-liver oil, which so frequently disagrees, does not now play the universal rôle it formerly enjoyed in the treatment of consumption.

Dr. Knopf⁵ emphasizes the importance of aërotherapeutics. "By aërotherapeutics is meant the gradual exposure of the patient to the open air until he virtually lives in the fresh air, winter or summer, rain or shine. This is what the Germans call the "Dauerluftkur." The patient is placed on the veranda, comfortably wrapped up on his lounge or steamer chair, in a position to admit of a complete muscular relax-

ation. Every half-hour or so he rises to take his breathing-exercises. I am willing to acknowledge that I think them of much greater importance than do the majority of phthisico-therapeutists. It is true that whenever there are old pleuritic adhesions these strong respiratory movements may become painful, owing to the tearing of some fibrinous bands, but this is salutary and not lasting. The respiratory muscles become developed, the increased pulmonary function makes the process of hæmatisis more complete, and helps to dissolve the mucus and aid in expectoration. This is the little system of exercises I have adopted : The patient, who is taught always to breathe through the nose, takes a deep inspiration slowly, while raising the arms from the sides to a horizontal position, holds the breath for a moment, and lowers the arms during the expiration, which should be somewhat more rapid. The second exercise is like the first, except that the upward movement of the arms is continued until they meet above the head. In the third exercise the patient stretches his arms out as in the position of swimming, the dorsal surfaces of the hands touching each other. During the inspiration the arms are moved outward and finally meet behind the back. They are brought forward again during the expiration. Each respiratory act should be followed immediately by a secondary forced expiratory effort. This is for the purpose of expelling as much of the supplemental air as possible, and may be effectually aided by supinating the arms and pressing the thorax with them. The feebler patients must content themselves with breathing-exercises at rarer intervals, and without rising from the bed or couch, and of course without moving the arms. Patients able to walk alternate their rest cure and breathing-exercises with graduated promenades, that is to say, walks on paths varying in inclination from one foot in three hundred to one foot in sixty feet."

The results of the injection of Maragliano's **Anti-Tuberculous Serum**, which have been received from abroad, are such as to justify its trial in this country. Dr. De Renzi⁶ finds that the injections do not give rise to any important unpleasant result ; swelling of the lymphatic glands may betoken a favourable reaction. In general, the appetite increases and a sense of well-being sets in. In some patients the tuberculous process is brought to a standstill ; in others progressive improvement shows itself. The peculiar curative action of the serum occurs gradually and unnoticeably ; it is most striking when compared with that of other measures intended for the cure of the disease. The cure can not be hastened by increasing the dose. The best results are obtained in cases of circumscribed and uncomplicated tuberculosis without much fever.

Dr. Fasano⁷ has employed the serum in the treatment of hospital patients who were carefully watched by him every day, and the results obtained led the author to the following conclusions: (1,) The serum is absolutely harmless and does not provoke lesions of the renal organs; (2,) In certain subjects there are some cutaneous manifestations, but they disappear rapidly; (3,) Occasionally the serum produces engorgement of the ganglia near the seat of injection, but this may be avoided by a rigorous antisepsis during the procedure; (4,) The serum has certainly an antithermic power, which varies with the temperature and the amount of serum injected; the lower the temperature the smaller should the dose be; when the temperature is higher the dose must be increased; a thermic lowering is obtained with 5 cubic centimètres, but the fever does not entirely disappear until after from twenty-five to forty injections have been given, according to the individual; (5,) The serum diminishes respiratory action and the frequency of the pulse, as it causes a moderated action of certain nervous centres; (6,) It increases the weight, the dynamometric strength, and the appetite from the beginning of the treatment; (7,) It increases respiratory power and invariably diminishes the sweats, and in certain cases causes their complete disappearance; (8,) The direct changes of the bacilli take place slowly in the expectoration; in the pure forms, that is to say without microbial associations, the disappearance and the diminution of the bacilli are more prompt, and when this condition occurs it is invariably maintained, and it is dependent upon not only the quantity of serum injected, but the duration of the treatment; (9,) The daily quantity of the expectoration constantly diminishes; (10,) In the forms in which *râles* prevail there is a drying of the broncho-pneumonic centre and finally a disappearance of the *râles*; (11,) The serum may be considered as a remedy for the local symptomatic processes in the extensive forms with fusion, cavities, and a high temperature, or as a curative in limited and initial forms.

In spite of the disappointment caused by the comparative failure of tuberculin, Professor Koch⁸ has continued his labours in search of another remedy against tuberculosis. This, he thinks, he has found in a substance, the "tuberculin remainder," or "TR," as he terms it. This new product possesses marked immunizing effects, and its administration is proceeded with in gradually increasing doses until immunity is obtained. He points out that the remedy is only efficacious in the early stages of tuberculous disease. Attention to this caution will prevent the disastrous results which followed the introduction of the original tuberculin. The Berlin correspondent of the

"Lancet" writes as follows: "In making use of the TR it is administered by injection into the back with a well sterilized Pravaz syringe. One cubic centimètre of TR, containing 10 milligrammes of the dry substance, is mixed before use with weak sodium chloride solution, and in the first injections $\frac{1}{500}$ milligramme of the substance is given. Injections are to be made every second day, and the dose is progressively increased until it amounts to 20 milligrammes. When the temperature rises the injections must be stopped for some time. Guinea-pigs treated in this way were so completely immunized that injections of virulent cultures had no effect on them. When TR was administered after an injection of tubercle bacilli a marked regressive metamorphosis of the tuberculous organs was observed. Full immunity is only attained two or three weeks after the administration of the maximum dose both in the case of the lower animals and in the human subject. In the beginning of the treatment there is no apparent effect and no impression is made on the tuberculous state until $\frac{1}{2}$ a milligramme or 1 milligramme has been given, so that patients who are likely to live only a few months should not be subjected to the treatment. Also patients suffering from secondary infection by streptococci and those in whom septic processes complicate the tuberculous affection will not derive any benefit from it. Temperatures exceeding 38° C. (100.4° F.) indicate a mixed infection and thus render the patient unfit for the TR treatment. Professor Koch has administered the TR to a great number of patients, especially sufferers from lupus, and in nearly every instance an improvement occurred—he did not say a "cure," because the time during which a relapse might take place was not yet past. In lupus it was especially remarkable that, notwithstanding a very small local reaction, the disease became less. This result is the reverse of that which was found to occur with the old tuberculin, where the therapeutic effect depended on the degree of the local reaction. In pulmonary tuberculosis the only local reaction observed after the administration of TR was a temporary increase of the catarrhal symptoms. After a few injections the sputum decreased in quantity, and at last it disappeared. In no instance did the general health suffer, nor were any undesirable symptoms observed. The patients' weight increased, and their temperature remained normal. Professor Koch concludes that probably the methods of administration may be improved, perhaps by combination with serum; but he thinks it will be impossible to improve the preparation itself."

All practical physicians are agreed that one of the most important elements in the treatment of tuberculosis is a good supply of easily-

digested food. Lorchet¹⁰ lays emphasis on the fact that the food which nourishes and is suitable for a healthy man, is not sufficient for tuberculous subjects; they require super-alimentation, which, being methodically administered, modifies, and finally greatly exceeds the amount required for nutrition.

This principle, which was established by Debove, led to forced alimentation by gavage, and it has happened that patients attacked by unsurmountable anorexia have in this way recovered their natural appetites. These not uncommon examples would appear to confirm the opinion of Debove, that there is no relation whatever between the appetite of a tuberculous subject and the digestive power of his gastrointestinal juice. **Meat Powder** is a useful basis of super-alimentation, as it is easily assimilated without fatiguing the digestive organs. It may be given alone or mixed with other liquids.

The importance of food to the consumptive is forcibly brought out by the following words of Debove¹¹: "We know what the future has in store for the consumptive who ceases to eat. He is consumed by the fever; has sudorific, intestinal, and bronchial losses; while his receipts are *nil*, and his expenses exaggerated."

Silver Nitrate¹² has been recommended in the anorexia of pulmonary tuberculosis. It may be given in pill form:—

R. Argenti Nitratis gr. vijss | Micæ Panis q.s.
M. Ft. Pil. l. One to be taken with each meal.

One of the most troublesome symptoms to combat in cases of pulmonary tuberculosis is the vomiting which so frequently accompanies the cough. Mathieu¹³ points out that the vomiting largely depends upon the fact that the stomach is reflexly irritated from the pneumogastric nerve by the diseased condition of the lung. He has obtained better results by treatment directed to lessening the irritability of the gastric mucous membrane, than by the use of opiates and other sedatives, or by the application of counter-irritants employed in the hope of checking the cough. He directs that small pieces of **Ice** should be given immediately after meals. He has also had good success from the administration of **Chloroform-Water** diluted with an equal part of ordinary water, in doses of 2 to 4 teaspoonfuls every ten minutes. Another remedy he has employed is **Menthol**, grs. 3, dissolved in 5 ounces of sweetened water, and given in the same doses and manner as the chloroform water.

Ferrand¹⁴ states that he has obtained the best results from diminishing the sensibility of the pharynx by the application of a 10 per cent. solution of **Bromide of Potassium** in glycerin.

Barth¹⁵ recommends the following formula for the relief of acid dyspepsia in tuberculous subjects :—

R̄ Prepared Chalk,	Binox. of Manganese	gr. 2
Calcin. Magnesia, āā grs. iv	Powd. Belladon. Leaves	gr. $\frac{1}{8}$
M.	For one dose, to be taken after eating.	

Should there be much pain, he adds to this formula $\frac{1}{8}$ of a grain of **Powdered Opium**. For the vomiting which is so frequently met with in tuberculous patients, he administers 2 to 3 drops of **Wine of Opium** or a teaspoonful of the following solution, which is particularly useful if the vomiting follows excessive cough :—

R̄ Hydrochlorate of Morphin gr. $\frac{1}{3}$	Distilled Water	℥iv
One or two teaspoonfuls as needed,		

In attacks of diarrhœa and vomiting, which may arise in the course of phthisis, Dr. Nansome¹⁶ has found 1 grain of **Calomel** and $\frac{1}{2}$ grain of **Opium** to “act like a charm” in relieving both these symptoms. If they persist, a few doses of the following will often do good :—

R̄ Acid. Sulph. dil.	Syrup. Aurantii	℥j
Nepenthe	āā ℥x	
M.	Ex aquæ sumend.	

Among the drugs which have recently been introduced for the treatment of pulmonary consumption, **Oil of Cinnamon** certainly deserves a further trial. Dr. J. Hilton Thompson¹⁷ has employed it in the form of inhalation with very good results. The ordinary oro-nasal inhaler can be used. Patients like the smell and taste of the oil; it causes no irritation of the air passages, and does not interfere with the appetite; it can therefore be used most of the day and also at night with very little discomfort.

Dr. Moritz Cohn¹⁸ regards **Ichthyol** as being of use in increasing the strength of the organism and placing it in a successful position to carry on a successful warfare against the bacilli. He states that in advanced cases improvement often follows when cod-liver oil and creasote have failed. It possesses the advantage over cod-liver oil that it can be given in summer as well as in winter, and over creasote that it is harmless in large doses. For poor people its cost recommends it. It can be given in 2 to 50 drops, thrice daily before meals, of the mixture of equal parts of the drug and distilled water, diluted with water and followed by black coffee or lemonade. The best mode of administration is in the form of capsules, 5 to 30 grains daily.

“The clinical evidence of the past five years is almost invariably unanimous in favour of **Creasote** as a remedy in pulmonary tuberculosis.” So says Dr. Crook,¹⁹ who has carefully analyzed the liter-

ature on the subject. The tendency of the last year or two, however, is to substitute the non-toxic and non-corrosive creasotal (the so-called carbonate of creasote) and the carbonate of guaiacol for the toxic and corrosive creasote and guaiacol. Creasotal may be given in doses of $\frac{1}{2}$ a teaspoonful daily in milk, beef-tea or wine, according to the taste of the patient; the dose may gradually be increased until the maximum of 3 teaspoonfuls daily is reached. The carbonate of guaiacol is a white crystalline powder, almost inodorous and tasteless, insoluble in water, and non-corrosive. The dose to begin with is 2 to 5 grains three times a day, and the dose can be increased until 60 grains are taken daily; as a rule, however, 30 grains daily is a sufficient dose. The drug can be given in milk or jam.

Dr. Chaplin and Dr. Tunnicliffe²⁰ have tried a newly synthesized body, **Piperidin Guaiacolate**, which not only contains an antiseptic moiety, but also a constituent which possesses a nervine and vascular tonic action. Piperidin guaiacolate is comparatively soluble, *i.e.*, gr. x can be given in an ounce of water, or if a little glycerin or mucilage is added, a dose of gr. xx to xxx can be given. The initial dose employed was 5 grains thrice daily, increased gradually to 30 grains. The conclusions at which the introducers of the drug have arrived are the following: (1,) That experience has shown that it is a perfectly safe drug in doses of from 5 to 30 grains three times a day; (2,) That it causes no unpleasant effects; (3,) That it is exceedingly well borne by the stomach, and in this respect it is equal to any other derivative of creasote; (4,) That patients while under its influence improve in appetite and general strength.

Dr. Mays²¹ lays stress on the neurotic origin of pulmonary consumption, and on the basis of this theory he urges the employment of **Strychnin**. He says that of all the drugs in the *materia medica* there is none that compares favourably with strychnin in the treatment of this disease. He begins with $\frac{1}{30}$ of a grain four times a day; gives this for a week, then increases it to $\frac{1}{24}$ of a grain for another week; during the next he gives $\frac{1}{20}$ of a grain, the following week the dose is raised to the $\frac{1}{16}$ of a grain, and so on, making a slight increase every week until nervousness, restlessness or twitching of the muscles is observed, the signs of the beginning of strychnin intoxication. In most cases these symptoms do not develop until $\frac{1}{12}$ or $\frac{1}{8}$ of a grain or even a larger dose is reached. When the maximum dose has been attained, it is well to reduce the amount and gradually increase it again. When administered in this way the drug may be given for an indefinite period to the majority of phthical patients.

Dr. C. Schröder²² recommends **Peronin** (the hydrochloride of the benzyl ether of morphin) in the treatment of the obstinate cough of phthisis, in doses of 0·31 to 0·62 of a grain. He classes it as being intermediate in action between codein and morphin.

In order to purify the atmosphere of the room inhabited by a phthysical patient, the following solution may be plentifully and frequently sprayed²³ :—

R̄ Guaiacol	10	Thymol	2
Eucalyptol	8	Oil of Clove	1
Carbolic Acid	6	Alcohol (90 per cent.)	170
Menthol	4		
Mix and dissolve.			

The change which has taken place during the last thirty or forty years in treating patients is well illustrated by a paper of Dr. E. Playter,²⁴ on "Cold air in the treatment of Phthisis." Instead of keeping consumptives carefully guarded from exposure to night air, he recommends that a bedroom window should be open all night near the head of the bed, sometimes with a fire in the room morning and evening, and sometimes during the night, for ventilation. Unfortunately in this country during the winter this plan cannot be carried out thoroughly on account of fogs and damp; still much more might be done to encourage patients to get as much fresh air as possible during the night as well as by day. As Dettweiler,²⁵ of the Falkenstein Institute, has pointed out, "The pure, cold air quiets the cough, lowers the fever, arrests the night-sweats, restores the appetite, and retards the course of the disease."

Dr. Theodore Williams²⁶ sums up the contra-indications of altitude in phthysical cases as follows: (1,) Phthisis with double cavities; (2,) Fibroid phthisis and all other conditions in which the healthy pulmonary area hardly suffices for respiratory purposes at sea level; (3,) Catarrhal and laryngeal phthisis; (4,) Acute phthisis of all kinds, especially when associated with nervous irritability; (5,) Phthisis with pyrexia; (6,) Emphysema; (7,) Chronic bronchitis and bronchiectasis; (8,) Organic diseases of the heart and great vessels; (9,) Disease of the brain and spinal cord; (10,) Anæmia; (11,) Patients too feeble to take exercise; (12,) Patients who have degenerated organs from long residence in tropical countries.

Quincke²⁷ mentions the following operations upon the tuberculous lung :—

(1,) Aspiration of an abscess. and subsequent injection of medicinal agents, has seldom been employed and with contradictory results.

(2,) Opening and drainage of an abscess cavity.—This has been performed either as a single operation or in two stages—the lung first

being brought to the surface and fastened, and the cavity opened later. Three of these ten cases recovered; in the others the sinus persisted or the disease progressed to its termination or the patient passed from sight. Sometimes the sinus became tubercular or drained unsatisfactorily.

(3.) Excision of the tubercular portion of the lung has been performed, but is very dangerous, and there is no certainty that the cure, if successful, will be a radical one.

(4.) Removal of the overlying ribs favours the collapse of the walls of the abscess cavity, and so assists nature in effecting a cure. This operation, which seems to Quincke the most rational one, has been performed with success in two cases.

REFERENCES.—¹"Brit. Med. Journ.," Oct. 10, 1896; ²"New York Med. Journ.," April 17, 1897; ³"Med. Rec.," Feb. 13, 1897; ⁴*Ibid.*; ⁵*Ibid.*; ⁶"New York Med. Journ.," Nov. 21, 1896; ⁷"Progrès méd.," Oct. 10, 1896; ⁸"Lancet," April 10, 1897; ⁹*Ibid.*; ¹⁰"Méd. mod.," Dec. 16, 1896; ¹¹*Ibid.*; ¹²"New York Med. Journ.," April 24, 1897; ¹³"Rev. de théér. méd.-chir.," Dec. 1, 1896; ¹⁴*Ibid.*; ¹⁵"Therap. Gaz.," Dec. 15, 1896; ¹⁶"Med. Times and Hosp. Gaz.," Nov. 7, 1896; ¹⁷"Brit. Med. Journ.," Nov. 7, 1896; ¹⁸"Amer. Journ. Med. Sci.," Dec., 1896; ¹⁹"Med. Rec.," Mar. 27, 1897; ²⁰"Brit. Med. Journ.," Jan. 16, 1897; ²¹"New York Med. Journ.," Oct. 24, 1896; ²²*Ibid.*, Mar. 6, 1897; ²³"Med. Rec.," Jan. 30, 1897; ²⁴"Amer. Med. and Surg. Bull.," Oct. 17, 1896; ²⁵*Ibid.*; ²⁶"Med. Rec.," Feb. 27, 1897; ²⁷"Amer. Med. and Surg. Bull.," Nov. 21, 1896.

PHTHISIS (in Australia). *G. Lane Mullins, M.A., M.D., Sydney.*

The death-rate from phthisis is undoubtedly decreasing in every Australian colony. This is due chiefly to improved sanitation. In New South Wales the victims are largely composed of natives of the United Kingdom. Of two thousand one hundred and eleven victims in 1893-4, the birthplaces were as follows: Australia, nine hundred and seventy-three; United Kingdom, nine hundred and sixty-one; British Possessions, twenty-three; other European countries, eighty-seven; China, fifteen; U. S. America, fourteen; Polynesia, eight; other countries, three; not stated, twenty-seven. Of the total number, therefore, 46·1 per cent. were natives of the Australasian colonies, while 45·52 per cent. were natives of the United Kingdom; all other countries being represented by 8·38 per cent.

The population of this colony at the last census (1891) consisted of 72·29 per cent. of Australian born, 23·5 per cent. of natives of the United Kingdom, and 4·21 per cent. others. The large proportion of deaths among the natives of the United Kingdom is due either to

the cases sent out being unsuitable, or to the patients residing in unsuitable parts of the colony.

The accompanying particulars will indicate somewhat roughly the suitable and unsuitable cases for the climatic treatment in these colonies.

The following are, as a rule, able to bear the long voyage, and benefit by a sojourn in Australia: (*a*,) Those who are predisposed to phthisis; (*b*,) The scrofulous; (*c*,) Those who are in the early stage of phthisis, where there is consolidation of the lung around the tubercle; (*d*,) Those in whom the disease is quiescent; (*e*,) Those who are the subjects of frequent small hæmorrhages; (*f*,) Those who have slight lung mischief with irritable cough, but no fever; (*g*,) The anæmic or those with defective appetite; (*h*,) Those who are fairly free from dyspnœa and cough, and can take exercise.

The following are *unsuitable*: (*i*,) Weak, nervous or excitable subjects; (*j*,) Those who suffer severely from *mal-de-mer*; (*k*,) Those who are the subjects of severe hæmorrhages; (*l*,) Those who are in the acute or fever stage; (*m*,) Those who, in addition to slight phthisis, are the subjects of other organic diseases; (*n*,) Those in whom phthisis is advanced, and the mischief still extending.

As to the suitability of any particular district, a local practitioner should be the judge in each individual case. A patient seen for the first time should not be sent to Australia at once, but opportunity taken to study individual peculiarities, temperament, etc.

If the opinion that the patient would be benefited by a sea-voyage be formed, a full description of the case should be written out, and given by the patient, on arrival, to a medical practitioner, who can make further inquiries as to how the patient has stood the voyage, etc., and ascertain by a physical examination whether the case has improved or not.

The patient should be instructed as to the hygiene of the voyage. He should engage a roomy, well-ventilated cabin to himself; the necessity for attention to diet, clothing, exercise, the dangers of night air, etc., should be impressed upon him.

If there be any doubt as to the patient's ability to stand the voyage, he should not be allowed to leave home.

REFERENCES.—"Aust. Med. Gaz.," Aug. 20, 1895, and "Brit. Med. Journ.," Aug. 22, 1896.

PILES. (See "Hæmorrhoids.")

PLACENTA (Adherent). (See "Labour.")

PLACENTA PRÆVIA. (See "Labour.")

PLAGUE (Bubonic).*A. Mitra, L.R.C.P., L.R.C.S., Kashmir.*

The following definition given by Cantlie is comprehensive : "Plague, or Malignant Polyadenitis, is an acute febrile disease of an intensely fatal nature, characterized by inflammation of the lymphatic glands, marked cerebral and vascular disturbances, and by the presence of a specific bacillus."

Plague Bacillus.—During the Hongkong epidemic the great Japanese bacteriologist, Kitasato, who formerly worked with Koch in Germany, discovered a bacillus in plague-stricken patients, and showed by experiments that these bacilli if injected into lower animals produced in them symptoms of plague. Yersin simultaneously discovered the same germs in connection with plague. According to our modern notion of the causation of disease, these germs must be considered to be the specific poison which produces the symptoms of plague. The bacilli are found in the blood, in the buboes, and in all internal organs of the victim of the plague. They are short rods with rounded ends, with a clear space or band in the centre, readily stained by the anilin dyes, and showing very little power of movement. The size of the plague bacillus varies, and bacilli of the same character, but of less virulent nature, have been found in the soil of infected places. Some bacteriologists have observed some development after death in the bacilli ; this, if confirmed by observations at Bombay, will be highly interesting from a bacteriological point of view. If mice, rats, guinea-pigs and rabbits are inoculated with the plague bacillus, they soon become infected and die, and in their internal organs the same bacilli are found. The bacilli are also found in the soil and dust of houses where plague patients have been located, but not invariably so. Kitasato found the bacilli in the blood of patients convalescing from an attack of plague, even three or four weeks after all symptoms had disappeared. It has been found that the bacillus dies after four days, during which it is kept at a dry heat, or at the temperature of 80° C. or 176° F. for half an hour, or at that of 100° C. or 212° F. for a few minutes. Its resisting power to chemical disinfectants is feeble, as it dies in a 1 per cent. solution of carbolic acid or of lime water. It develops easily in many culture media at the ordinary temperature (from 18° to 22° C.). An alkaline solution of peptone, 2 per cent., with from 1 to 2 per cent. of gelatin, is the best nutrient medium for its cultivation.

Plague Contagious as well as Infectious.—Experience has proved that plague can be transmitted from one person to another by direct contact ; when a case of plague occurs in a house, other inmates of the house are thus liable to be attacked also. Visitors to the house, medical and other attendants, are also liable to be seized or to carry with them

fresh foci of infection. It was, however, found in the Hongkong epidemic of 1894 that none of the European medical men, some fifteen in number, nor any of the Chinese students who were on duty at the plague hospital died. During the Egyptian epidemic of 1835 a French doctor, Bulard, with the courage of his conviction that plague was not contagious, wore the shirt of a patient who died from plague, and yet did not contract the disease. Such immunity, however, was probably due to some circumstances which might be easily explained. In the Hongkong epidemic of 1894 three Japanese medical men contracted the disease, and in 1896, some European nurses were attacked. In Bombay the sad deaths of Surgeon-Major Manser and Miss Joyce prove that contagion plays an important part in the spread of the disease.

Rats are undoubtedly attacked with plague before and during its prevalence among human beings, and they play an important part in the spread of its infection.

Like other diseases due to a specific germ, the infection of plague may be caught from various sources such as the following: (a,) *By means of inspiration.* Plague dust and dirt are very potent and infective agents. A man getting a whiff of dust blown into his face from the floor of a room, in which there is a plague patient, may get the infection. Sweepers and others engaged in conservancy are, therefore, easily attacked; (b,) *By food or drink.* Grain adulterated with sand or earth, infected by rats, may be a source of infection. Food may also be infected by flies or diseased rats; (c,) *By direct inoculation* through any abrasion in the skin or mucous membrane. People with bare feet are, therefore, more liable to catch the infection. The infection may also be spread by infected linen, bedding, furniture and fonites. The discharge from buboes contains the germs, and is, therefore, highly poisonous. The fæces, the urine, the sputum, the fur on the tongue, are also infective. If the theory be true that the poison attaches itself to the soil, then persons living on ground-floors are more liable to the infection, and a floating population less so. Dust laden with germs is the principal agent in the diffusion of plague, as it is also of any other germ disease. Professor Aoyama of Tokyo, whilst making a *post-mortem* examination, scratched the left third finger and was attacked with the plague, also Dr. Ishigami, assistant to Kitasato.

Sex and Age.—Both sexes are equally liable to plague. It is said that people between the ages of ten and thirty are mostly attacked. But experience shows that children and old people are alike liable to attack. In Bombay the disease has occurred most frequently in those

between the ages of twenty and thirty, and the male sex has suffered more than the female.

Sanitation and Personal Hygiene.—Plague germs thrive in filth. Bad hygienic conditions, over-crowding, insufficient ventilation, and absence of sunlight in dwelling houses, accumulation of decomposing organic matter, effluvia from bad drains, sewers and cesspools, are causes that favour the growth and dissemination of an epidemic of plague.

Predisposition.—Chill and exposure to cold, indigestion and any other condition producing a debilitated state of body, fatigue, over-work, error of diet, mental emotion, and a fear of attack, are predisposing causes. Catarrhs often predispose to an attack.

Incubation.—How long does it take for the poison to develop symptoms after infection? Generally three to six days, but the period may extend to ten days. The time varies with the virulence of the poison. The germs, however, remain active outside a host for a long while. An instance has been reported, in which a man, after handling some ropes which twenty years previously had been used in the burial of plague corpses, took the disease and died of it.

SYMPTOMS.—The usual premonitory symptoms are headache, loss of appetite, a feeling of general depression and aching of limbs. These symptoms may either be mild or may appear at once in a very aggravated form; violent headache being usually of an acute dull character, accompanied by throbbing in the temples, giddiness, sleeplessness, palpitation, a feeling of oppression of the chest; even mental delusion may appear on the first day. The look of the patient is anxious, pale and cyanosed. The expression of the face resembles that of a man who has had no sleep for two or three nights, but is being overpowered with the fatigue consequent on it. These symptoms are usually ushered in with a rise in the temperature. Well-marked rigor is usually not seen, but a slight shiver or chilliness is complained of. Pulse is full, bounding and rapid—130 or more per minute. Respiration is difficult and accelerated, even to 40 or 50 a minute. Skin is dry and hot, face puffed, conjunctivæ congested. Sense of hearing is dull. Speech is thick and faltering. Tongue is dry and coated with greyish white or dark brown heavy fur. Violent thirst is present. Sometimes petechiæ appear on the skin. In a few hours, or a few days, after the appearance of the first symptoms, a swollen gland appears either in the neck, or axilla, or groin. The gland most commonly affected is one or some of the femoral chain. An inguinal, axillary or cervical gland may also be affected. A number of glands may swell at one time, or glands in all the above situations may be

felt painful and swollen. The glands of the neck are most frequently attacked in children. Pains in the lower part of the abdomen and along the spine indicate affection of internal lymphatic glands. In some cases the first symptom noticed is a swollen and painful gland, but fever soon manifests itself. The glandular enlargement may antedate, coincide with, or follow the rise in temperature. Sometimes only pain in the gland is complained of, but no swelling is observed. The temperature rises gradually and goes up to 104° , 105° or 106° F. In some cases a temperature of 108° was observed. There may be a marked morning fall and an evening exacerbation, which is a favourable sign, or the temperature may remain high persistently. All the above symptoms become quickly aggravated when the second stage, or stage of acute development of the disease, appears. Brain symptoms show themselves. Lowson noticed four distinct types of brain symptoms: (1,) Comatose, when the patient lies paralyzed, mind and body; (2,) Wildly delirious, when the patient struggles and fights and still retains a fair command of rational speech; (3,) Apathetic, when he lies perfectly quiet but is drowsy; (4,) Convulsive, which condition occurs when there is inflammation of the meninges, or hæmorrhage in the brain.

In this stage all symptoms of a pronounced typhoid condition supervene. Tongue becomes parched and black. Sordes cover the teeth. Gradually a somnolent condition and low muttering delirium supervene. In some cases the delirium is violent and furious, while in others it culminates in complete stupor and coma. Picking of the bedclothes and subsultus tendinum are common, and the urine and fæces are passed involuntarily. The pupils are dilated. The skin is bathed with profuse perspiration. The pulse is dicrotic and compressible, and gradually becomes anacrotic and intermittent till it finally fails. The area of cardiac dulness is increased, and pain in the cardiac region is complained of. Heart begins to fail rapidly. The usual complications of this stage are: (1,) Meningitis; (2,) Hæmorrhage; (3,) Severe gastric disturbance, such as vomiting, diarrhœa, hiccough. As a rule, constipation is found during the course of an attack, but diarrhœa, even severe, may appear. There may be pain in the abdomen. Bladder may be distended, and a catheter may be necessary to evacuate it. Cystitis often develops. Œdema of the lungs, pleurisy, and pneumonia may also complicate a case. Hæmaturia, hæmoptysis, and hæmatemesis may be seen. Bronchitis and hypostatic inflammation may occur. The urine always shows presence of albumin. Death may take place from cardiac failure, or from any of the above complications, and it may

take place within three or four days, though in some virulent cases the patient dies within twenty-four hours. If the primary collapse is tided over, there is great hope of recovery ; still deaths often occur of complications several days after the attack.

In mild cases the second stage is not so severe, and temperature may fall by lysis or crisis—the latter being rare.

The glands in the meantime become swollen and are surrounded by a sero-sanguinous exudation. The surrounding parts are œdematous. The glands usually do not suppurate, but they may do so and slough. The usual course after their enlargement is one of four : (1,) Resolution ; (2,) Lengthened period of enlargement ; (3,) Suppuration ; (4,) Sloughing. In cases that recover the symptoms gradually take a favourable turn, and recovery is as rapid as the attack. The fever slackens, the pulse becomes stronger, the tongue moist, and the typhoid symptoms gradually pass away. The buboes either suppurate or subside ; symptoms of secondary pyæmic conditions, however, may sometimes develop. Deviations from the typical course are, however, often observed. Some cases take an extremely rapid course, the patient succumbing within from twelve hours to two days. The duration of the disease varies between a few hours and a few weeks, but on an average up to the commencement of the convalescence it seems to last from six to ten days. During convalescence the vitality of the tissues is very low. Head symptoms sometimes persist for a while. Temper is irritable. The sloughing glands often take a long time to heal. Convalescence is soon established.

Varieties.—Drs. Simpson and Cobb, of Calcutta, have described what is called *Pestis Ambulans*, or an ambulatory form of plague, in which plague germs have been found. The commonly accepted types of plague are : (1,) Fulminant ; (2,) Typical ; (3,) *Pestis Minor* (including *ambulans*). The cause of the first two is the bacillus discovered by Kitasato, and they are very fatal ; of the third, the cause may be an allied bacterium less potent to produce toxic effects on man, and it may come and go but plague may not break out. In the ambulatory form the patient has slight fever and glandular enlargement, but he can move about.

DIAGNOSIS.—It is difficult to differentiate a case of true plague in its early stages from a case of fever with benign glandular swellings or mumps. The premonitory symptoms of plague, and even the early symptoms of the first stage, may be due to many different diseases, and therefore great caution is needed. It is needless to say how important it is that such diagnosis should be done with great care, especially when plague cases have to be isolated ; for if a case of

simple fever with benign lymphadenitis be brought in close contact with patients suffering from true plague, it is a serious matter with the former. A venereal bubo, or scrofulous enlargement of glands, or enlargement of femoral or inguinal gland due to traumatic or other causes which may be attended with fever, should not be mistaken for a plague symptom. The practical lesson is, that all doubtful cases should be isolated and kept separate from cases of pronounced type. The plague bears some resemblance to typhus. Murchison says: "Plague is perhaps the typhus of warm climates, the two diseases being generated from similar causes and differing only in intensity from the effects of climate and other collateral circumstances." In typhus there is a characteristic rash, and in plague there is bubo; but this order of things has been found in some instances to have changed, there being eruption in plague and bubo in typhus. The two diseases are, however, different, and bacteriological and clinical evidence corroborate this view. Cantlie adds another disease, which he says he mistook for plague: "On June 26, 1894, when the plague was at its height, I saw a Parsee patient dwelling in a house in which plague existed, suffering from fever (104° F.), dry tongue, headache, backache and large swollen glands in the left groin, which had suddenly appeared. Plague seemed the only diagnosis, and the man, much against his will, was sent to the plague hospital. In two days he came back again quite well, and on examining him, I found his urine thick and milky. That night I found filaria in the man's blood, and knew I had made a mistake in the first instance. Of course, the mistake is most likely to happen, but nevertheless it is not pleasant to think that we had subjected the man to the terrible danger of plague infection."

PROGNOSIS.—In children and in the aged the disease is more fatal than in healthy adults. Cases in which the bubo appears early and is single, or in which there is a distinct morning remission, or less general prostration or free perspiration, or in which there is no diarrhœa, have greater chance of recovery. Rapid suppuration of the buboes indicates a favourable termination. Buboes do not suppurate, as a rule, until the primary fever has fallen. On the other hand, carbuncles, multiple buboes (especially on the neck), meningitis, hæmorrhages, pleurisy, pneumonia, diarrhœa, gastric irritation, cyanosis, jaundice, and continued pyrexia, are unfavourable signs.

PROPHYLAXIS.—It is evident from what has been said that to prevent plague our efforts should be directed in two ways: (1,) To prevent the importation of germs; (2,) To make the environment of a place such that the germs, even if imported, may not find suitable

conditions for their growth. To accomplish the first we need : (a,) Inspection of people coming from infected places ; (b,) Stopping importation of such articles as may carry infection with them ; (c,) Quarantine, a word which owes its origin to the fact, that during the epidemic of plague at Milan, in 1527, patients when cured were despatched to Lazarettos and detained there 'forty days'.

For the second, we require : (a,) Sanitary precautions by guardians of public health ; (b,) Observance of rules of personal hygiene by which good health can be maintained.

(1,) Wherever possible a medical inspection should be made to prevent importation of the disease. This is, however, a very difficult matter, and one unforeseen difficulty was experienced at Sukkur, where it was found that people booked to stations short of Sukkur, and rebooked at stations on the other side. Still this measure is highly important, and should be carried out most rigorously as long as there is any chance of importation of plague into an unaffected country. It is needless to feel the pulse of the patient ; his gait, temperature, and look would afford a great deal of information. Information should be obtained from the place whence the patient is travelling. An examination should also be made of the clothes. Dirty clothes, soiled linen and rags, should not be allowed to pass through an inspection post.

(2,) There should be a disinfecting or sterilizing room fitted with a steam sterilizer at all large railway stations, where all goods should be disinfected. Mail bags should also be subjected to this disinfection. Transmission of such goods as corpses, used clothes, rags, waste paper, fur, hides, leather, and fish should be entirely suspended.

(3,) If quarantine is imposed, it should be for a period of not less than ten days. Every arrangement however should be made for suitable accommodation and sanitation in quarantine camps, and new arrivals should not be mixed up with those already in quarantine.

(4,) Ships from infected ports should be carefully watched. If any infection is discovered, then isolation of the sick, disinfection of the ship and quarantine are required ; but ships with clean bills of health, and provided ten days have passed since their departure from an infected port, may be admitted after medical inspection. It must, however, be borne in mind that rats could easily carry infection from one port to another without any fear of detection. These facts show that medical inspection and quarantine may be useful, but they can never be perfect, and therefore the principal safeguard of a place lies in the improvement of its sanitation, and hence greater attention and energy should be directed to this end.

TREATMENT.—(1,) *Hygiene*.—The patient should take to bed immediately on the appearance of the first symptoms. The room should have means for free ventilation, and the temperature in it should be between 60° and 70° F. The air of the room may be cooled by a block of ice. The room should be kept clean, and there must not be in it any curtain, carpet or hangings. The floor and bedsteads should be daily washed with a disinfectant. A position of absolute rest in bed is to be maintained throughout the illness.

Bedpan and urinal should always be used. Bedclothes should be light and warm. Wearing apparel if saturated with perspiration should be changed. It is best to have two beds side by side so as to be able to move the patient easily from one to another for cleansing purposes. Mattresses should be suitably protected from penetration by the discharges. The air of the sick room can be fumigated by placing pieces of blotting paper saturated with eucalyptus oil, or phenol on plates, about the apartment, or by pouring carbolic acid on hot water in a plate. The doorways should be curtained with a sheet wet with disinfectant solution. Great cleanliness of the body of the patient should be enforced by cold sponging with an antiseptic solution. Skilful nursing is essentially necessary. The motions should be disinfected with strong antiseptics, such as quicklime, carbolic acid, etc., as soon as they are passed.

(2,) *Dietetic*.—From the commencement of the disease the diet should be liquid and nourishing. Milk is best. The quantity for adults should not be less than three or four pints in the twenty-four hours. It must be given in small quantities at short intervals. Soda, potash, or plain carbonated water may be mixed with it. Barley water and thin sago water may also be given. If the patient's vital powers are low, the milk may be peptonized by using Fairchild's powders, or by adding a little of Benger's *Liquor Pancreaticus*. In cases when milk cannot be taken in sufficient amount, animal food may be given in the form of plain meat broth. Egg-flip, with or without brandy, may also be given. It is useless to give strong meat essences when the digestive powers are seriously impaired, and excess of zeal in this direction does a great deal of harm. These accumulate in the intestinal canal and form a fermenting mixture in which poisonous ptomaines form. Throughout the attack the patient's strength should be husbanded as carefully as possible. When there is thirst, water, or iced water, or iced beer or stout, or ice-cream, or fruit *sherbet* should be given. During convalescence great attention should be paid to the diet, for then the vital powers are at a very low ebb.

(3,) *External*.—I suggest that when the temperature is high 15 drops of **Creasote** may be rubbed in near the axilla. During height of fever, the body may be lightly sponged over, twice or thrice a day, with the following solution :—

R̄	Thymol	grs. xl	Acid. Acetic dil.	℥iij
	Spirit. Lavandulæ	℥ij	Aqua Rosæ	add ℥xvj
	Spirit. Vini rectif.	℥iij		

Mustard Plasters to limbs and over the heart should be used when there are signs of failing heart and circulation, and over the epigastrium when there is vomiting or hiccough. **Smelling Salts** and **Strong Ammonia** should be applied to the nostrils for their restorative action. A **Blister** over the nape of the neck is useful when cerebral symptoms are present. An **Ice Cap** over the head is very useful, and should be applied continuously. The enlarged glands may be fomented with **Hot Water** or **Spongio-piline** wrung out of hot **Antiseptic Solution**. When they are very painful, **Poppy** or **Belladonna** may be added to the water. **Belladonna** with **Glycerine** should be applied in the beginning and **Iodine** afterwards. **Hot Corrosive Sublimate Fomentations** are also useful. If the glands suppurate, they should be opened aseptically and dressed with antiseptics. Proper drainage should be provided.

(4,) *Internal*.—**Quinine** in small repeated doses acts as a general antiseptic. I would, therefore, advocate its use especially in the early stages. Plague is a disease in which collapse sets in early, and cardiac asthenia is a very early complication; there is, therefore, great urgency for early stimulation. **Alcohol** may be given freely, but at the same time it must be remembered that if the organs of elimination are not acting properly, alcohol may do harm. For their stimulant effects whiskey or iced champagne may be given. **Carbonate of Ammonia** and **Aromatic Spirit of Ammonia** are held to be very useful stimulants in plague cases. They may be given in combination with **Cinchona**, **Digitalis** and **Ether**. A prescription like the following may be useful :—

R̄	Ammonia Carb.	gr. v	Tinct. Digitalis	℥ v
	Chloric Ether	℥ xx	Tinct. Cinchonæ	℥j
	Sulphuric Ether	℥ xv	Aqua Camphor.	℥j

To be taken every three hours.

For cardiac asthenia, the following may be tried: (1,) **Caffelne**, hypodermically, 5 grains dissolved by the aid of 5 grains of **Sodium Benzoate** in 20 minims of warm distilled water and injected three or four times a day if needful; (2,) **Ether** or **Ethereal Solution of Camphor** hypodermically; (3,) **Strychnine**, hypodermically, beginning

with grain $\frac{1}{80}$ every four or six hours till grain $\frac{1}{8}$ is injected, or **Liquor Strychnia** in 5 to 10 minim doses every four hours ; (3,) **Musk** may be given in 5-grain doses, or in the following mixture :—

℞ Pulv. Moschi	gr. x	Syr. Aurantii	ʒij
Mucilage Acacia	ʒij	Aqua Camphor.	ʒss

To be given every six hours.

Digitalis does not always give good results, a fact which Lowson attributes to some inflammatory or fatty degenerative changes in the small vessels giving rise to a tendency to hæmorrhage. **Strophanthus** may be substituted. **Transfusion of Blood**, or of **Hot Saline Solution** and **Inhalation of Oxygen** have been recommended for collapse. Dr. Vievas, of Bombay, recommends **Liq. Hydrarg. Perchlor.**, 10 to 15 minims, every four hours if there is no albumin in the urine. Dr. Dimmock has advised subcutaneous injection of **Guaiacol**, 10 or 15 minims, every two hours. **Potassium Permanganate**, 5 to 12 grains in twenty-four hours, has also been recommended. **Camphor** has been recommended by some as a cardiac stimulant.

TREATMENT OF SYMPTOMS.—(1,) **Hyperpyrexia** itself is, however, an injurious symptom, and when there is long continued high temperature it is necessary to reduce it, either by an antipyretic, quinine or cold bath, or cold sponging. The cold bath is not suitable in plague patients on account of the movement of the body which it entails, and also on account of the serious cardiac depression which accompanies the disease. **Phenacetin** (2 grains) with **Hydrobromate of Quinine** (1 grain) is a safe antipyretic. **Brandy** and **Tepid Sponging** are also very useful.

(2,) **Brain Symptoms.**—For headache apply a **Mustard Plaster** behind the upper part of the neck and over the occiput. An **Ice Cap** or **Leiter's Tube** or **Plain Water** should be applied over the temples and scalp. Nervine sedatives, such as **Potassium Bromide**, may be given for insomnia when there is not much depression. Otherwise full doses of alcohol may be tried. Opium should not be used ; but in mild cases, without great depression, 10 to 20 minims of **Liquor Opii Sedativus** with 30 minims of **Sal Volatile** in an ounce of **Camphor Water** may be given to soothe nervous unrest. For insomnia, Lowson speaks highly of **Morphine**, grain $\frac{1}{8}$ to grain $\frac{1}{2}$. **Hyoscine**, grain $\frac{1}{200}$ to grain $\frac{1}{75}$, may be tried. Meningitis should be treated with cold to the scalp and counter-irritation to the nape of the neck and occiput.

(3,) **Hæmorrhages** may be treated with **Ergot**, or **Ergotin** internally or hypodermically. When there is much hæmorrhage the use of alcohol should be partly suspended.

(4,) If there is constipation, a dose of **Calomel** may be given. In

the beginning there is almost always constipation, which should be removed by a dose of calomel followed by a saline. Diarrhœa may be checked by an **Enema of Opium**. **Dover's Powder**, 2 grains, and **Tannin**, 10 grains, mixed with an ounce of gum mucilage and with 2 or 3 ounces of warm water, arrowroot or starch may be used for injection. **Salol** in 10-grain doses every four hours may be given for diarrhœa. For vomiting and hiccough place a **Sinapism** over the epigastrium, or try **Sucking of Ice**, and for thirst acidulated water with syrup of lemon is recommended. Coma must be promptly met by **Cold Effusion** if there is pyrexia, or by rectal injection of **Strong Coffee**. The bladder should be carefully watched. Pneumonia and other complications should be treated on general principles.

When the temperature falls and convalescence begins, stimulants should be lessened, and afterwards a tonic with **Quinine**, **Acid Nitro-muriatic Dil.**, **Tinct. Calumbæ** or **Quassia** may be given with **Iufus Aurantii**.

Inoculation against Plague.—M. Haffkine has commenced to inoculate against the plague upon the same principles as those on which his inoculation against cholera is based. By injecting into the body an attenuated virus of plague, a very mild attack is produced, which in people inoculated has proved harmless. This mild attack, it is thought, would protect the system from more potent forms of the poisonous germs. Yersin also claims for his serum prophylactic value.

Serum Treatment.—As yet Yersin's serum has been tried in the declared diseases, but Yersin also proposes to use it as a preventive. Haffkine also proposes to make use of his serum for curative purposes. Yersin's serum is older than Haffkine's, otherwise bacteriologically they are identical. The subject is in far too unsettled a state at present, but it has no doubt a hopeful future before it.

DISINFECTION.—For purification of clothes and bedding, heat is the best agent, either by boiling them in water or by placing them in a hot-air chamber. The usual arrangement is a furnace with the smoke shafts passing under or on one side of a brick chamber and with a hot-air blast from a shaft running through or under the fire into the chamber itself, or into a passage below it, whence it passes into the chamber through a valve. An exit for the hot-air is provided at the top of the chamber. The clothes are suspended in the chamber at a little distance from the walls. High pressure steam in an apparatus contrived for the intermission of its pressure is found to give the best heat penetration to large non-conducting articles, such as bedding. Fumigation by burning sulphur or chlorine is a very useful method

for disinfection of rooms. Large bonfires of sulphur may also have a beneficial effect on the air.

Purification of a room after plague cases.—All woodwork should be thoroughly cleansed with soft soap and water, to which a little carbolic acid has been added. The walls should be scraped and then washed with hot lime, to which carbolic acid should be added in the proportion of 1 pint to 4 gallons of water. Then the room should be fumigated for three hours, with all doors and windows and the chimney closed, sulphur being put in a metal dish, with a little alcohol poured over it, when it is lighted. After three hours the doors and windows should be opened, and kept open for twenty four or thirty-six hours. Rooms may be disinfected with chlorin. Carbolic acid in 5 per cent. solution is useful for all ordinary purposes, such as washing hands utensils, etc.

Quicklime is the cheapest and the most easily procurable disinfectant for drains and for disinfection of discharges. Carbolic powder, made by adding carbolic acid to lime, is very useful for the disinfection of public latrines, drains and sewers. Corrosive sublimate, in the proportion of 1 part in 4,000, is the most efficient germicide known, and should be used diluted with water for sprinkling on public roads and for flushing drains and washing latrines, etc. It is, however, poisonous, and corrodes metal drain pipes. In quarantine, or isolation camp, the latrines should be of the dry earth system, and carbolic acid powder should be largely used in them. The question of the suitable disposal of sewage depends, of course, on the circumstances peculiar to each town or village, but incineration is the most sanitary method during an epidemic. Other disinfectants, such as Jey's fluid, creolin, phenyl, izal, sanitas, may also be used.

PLEURISY.

F. de Havilland Hall, M.D., F.R.C.P.

The subject of the etiology of pleurisy has been ably treated by Dr. Kingston Fowler.¹ From a bacteriological point of view the following varieties have been described: (1,) *Pneumococcus pleurisy*; (2,) *Streptococcus pleurisy*; (3,) *Saprogenic pleurisy*; (4,) *Tubercular pleurisy*; (5,) *Staphylococcus pleurisy*. Other organisms, such as the bacillus of typhoid fever, Friedländer's capsuled bacillus, and that of influenza, are also capable of exciting inflammation of the serous membrane, but cases so originating are of less frequent occurrence. Dr. Fowler states that in the majority of cases of sero-fibrinous pleurisy during life no micro-organisms can be found in the effusion, and no results are obtained either from cultures or inoculations. In spite of the facts that tubercle bacilli may not be found in the exudation,

and that the inoculation of the fluid into susceptible animals may not be followed by tuberculosis, nevertheless, the bacillus of tubercle is the causative agent in a very large proportion of cases of sero-fibrinous pleurisy, and this is true even though the attack is apparently simple, idiopathic, and attributed to a chill.

Osler² states : " I confess that the more carefully I have studied the question the larger does the proportion appear to be of primary pleurisies of tuberculous origin."

Dr. Hector Mackenzie³ sums up the matter as follows : " The important practical outcome of the view that idiopathic pleurisies are tuberculous is that great care should be taken in such cases to re-establish the general health. Tuberculosis of the serous membranes is much more likely to be completely recovered from than tuberculosis of the internal organs, but there is considerable danger of pulmonary phthisis developing. It would be well in such cases, where it is possible, for the patient to winter abroad for a year or two. As regards life assurance, no case where pleurisy with effusion has occurred within the last few years should be accepted."

In regard to the bacteriology of purulent pleuritis it is to be noted that the exciting cause can be determined in a much larger proportion of cases than with sero-fibrinous effusion. Those most commonly found are the pneumococcus, staphylococcus, the streptococcus albus, saprogenic organisms, and the bacillus of tubercle. A purulent effusion may also be produced by Friedländer's capsuled bacillus, the bacilli of typhoid and influenza, and certain others. Should no micro-organisms be found in a purulent effusion the presumption is strongly in favour of the case being tuberculous. The proportion of cases of tuberculous origin is much smaller in purulent cases than in sero-fibrinous pleuritis. In children more than half the cases of empyema are due to pneumococcal infection, whilst in adults in exactly the same proportion they are of streptococcal origin.

Dr. Fowler has arrived at the following conclusions as regards the treatment of purulent effusion : " If the pleurisy is proved to be due to the presence of the pneumococcus, the case should be watched for a time to observe if the fluid re-accumulates. In such an event it may be necessary to operate by resection of a portion of a rib and drainage, but it should be borne in mind that recovery may follow after repeated aspiration, particularly in children.

" If streptococci or putrefactive organisms are found the prognosis is far more grave, and the ordinary operation for empyema should be performed at once. In the latter case there is no necessity to wait for a bacteriological examination, as the presence of the organisms may

be inferred from the odour of the fluid. If no organisms are discovered, or only staphylococci, the case is probably tubercular. The same is true when tubercle bacilli are present alone, or in association with staphylococci ; but if streptococci are found, those organisms are probably the chief exciting cause of the inflammation.

"The view that no haste is desirable in dealing with chronic empyemata in tuberculous subjects originates from the observation of the unfavourable course, after operation, of cases of pyo-pneumothorax in such patients. Even in these cases it is now considered advisable by some physicians to have recourse to active surgical treatment ; the pleurisy which follows pneumothorax in a case of pulmonary tuberculosis is, however, not necessarily tubercular.

"The presence of a large quantity of pus in a tubercular empyema is quite compatible with the enjoyment of fair health, and life may be prolonged for years. If it becomes necessary to remove some of the fluid, repeated puncture appears to give better results than the ordinary operation for empyema, as the cavity rarely closes, and death ensues from amyloid disease or exhaustion."

Dr. W. M. Hulton⁴ uses a valved tube for draining the pleural cavity after incision in cases of empyema. He points out that with an opening in the chest wall the respiratory movements of the collapsed lung are reversed. During inspiration air rushes through the opening and causes still further collapse of the lung. If, however, a valved tube is used, both air and discharge are expelled with expiration, but with inspiration the valve closes and no air gets back into the pleural sac, and the lung remains so far expanded and is ready to expand still more with each expiratory act. Cases treated with such a tube are given, illustrating the success of the procedure. The apparatus is to be obtained from Messrs. Walters & Co., 69, Lambeth Palace Road, London ; or Messrs. Young & Son, Forrest Road, Edinburgh.

Pulsating empyema is a rare condition which may be mistaken for aneurysm, but as Dr. Samuel West⁵ pointed out, puncture with a fine needle could do no harm even in aneurysm, and would at once settle the diagnosis. Although pulsating empyemata have been generally considered fatal, the majority recover when treated in the usual way.

In cases of pleuritic effusion M. Miron⁶ paints the side with the following solution :—

R Guaiacol	5ss	Tinct. Iodi	āā 3ss
Glycerin			Mix.

He claims that effusion is absorbed by its use.

REFERENCES.—¹"Clin. Journ.," Feb. 3, 1897 ; ²"Prin. and Prac. of

Med.," 2nd Ed., 1895, p. 593 ; ³"Practitioner," April 1897 ; ⁴"Lancet," Feb. 6, 1897 ; ⁵"Brit. Med. Journ.," March 27, 1897 ; ⁶"Med. Times and Hosp. Gaz.," Nov. 28, 1896.

PNEUMONIA.

F. de Havilland Hall, M.D., F.R.C.P.

The evidence in favour of the microbic origin of pneumonia is now so strong that it is time that the whole question of the symptoms and treatment of this disease should be re-considered from the standpoint of our present knowledge. One of the most remarkable features of pneumonia is the rapid way in which, when once resolution has commenced, the affected portion of the lung regains its normal condition. Regarding pneumonia as being due to a specific poison, Dr. Girdner¹ is convinced of its infectious nature, and he consequently takes as much care about the disinfection of the expectoration of pneumonia patients as of the discharges of typhoid fever patients.

Dr. Porter² considers that there are three factors in the development of the pneumonic process, viz. : (1,) There is a lowering of the general physiological nutritive activity of the system ; (2,) As a result of exposure to cold, or any sudden chilling of the surface, the blood is rapidly driven into the viscera—the lungs, liver or kidneys—causing a localized congestion ; (3,) Under the lowered nutritive activity the congestion causes a slight exudation, which in turn affords a favourable culture medium for the special micro-organism. In the growth of this micro-organism toxins are produced and the remote symptoms are due to the poisoning of the tissues of the body. The crisis is probably due to the development of antitoxins.

Dr. Osler³ points out that it is rather upon the violence of this toxæmia than the amount of consolidation that the issue depends. Cases with profound toxæmia show wide variations from the typical clinical picture, while the local features of the disease are often quite overshadowed. Such cases early show cerebral symptoms, and are met with especially in epidemics and among old patients. Sudden death may be due to the action of the specific toxins, which probably affect the heart centres rather than the myocardium ; symptoms of collapse may set in within the first twenty-four hours and rapidly prove fatal. The amount of lung affected, even though extensive, is a much less potent cause of death than toxæmia. The depressing action of the toxins on the cardio-respiratory centres and the weakening effect of pyrexia on the heart muscle are important factors during the crisis, and help to explain the fact that venesection in pneumonia is not attended with such good results as in emphysema, morbus cordis, etc. Against toxæmia, which is the important cause of the high mortality, there are at present no reliable measures at our disposal

The hope for the future is that an antitoxin may be supplied for pneumonia, as efficacious as that already in use in cases of diphtheria. We shall then be spared those distressing cases of pneumonia in which if we could only tide the patient over a few more hours he would recover, and a great diminution in the mortality of "the most fatal of the acute infections of adults in temperate climates"⁴ would result.

In addition to the causes of death usually recognized as operative in lobar pneumonia, Bollinger⁵ draws attention to oligæmia as a common and often very pronounced feature of the disease, and argues that the collapse often observed in it is due, in great part at least, to the diminished quantity of blood, and consequent poor nutrition of the vital organs. He attributes this paucity of blood to the great drain upon it incident to the accumulation of the pulmonary exudate. Bollinger points out that leucocytosis in pneumonia has been shown to be of favourable prognostic significance, and he interprets this leucocytosis as an evidence of blood formation.

TREATMENT.—Dr. Baruch⁶ recommends the following method of treatment: Complete rest of body and mind. Thorough ventilation of the sick room. Diet restricted to milk and farinaceous broth, 4 to 6 ounces every two hours. Plenty of water. Since pneumonia was a disease of short duration, he did not believe in "stuffing" the patients. Alcohol was not necessary, as a rule. He used few medicinal agents, but gave a good dose of **Calomel** at the outset, not repeating it. Its effect was twofold: placed dry upon the tongue, it destroyed the diplococci in the mouth; it removed the ptomaines which might have lodged in the gastro-intestinal canal. Further, it probably was of benefit in indirectly relieving the engorged lung by acting upon the portal circulation. The patient was directed to rinse the mouth frequently with **Chlorate of Potassium**. **Strychnin** was used hypodermically for the heart.

Dr. Baruch regards hydropathy as an important means of treatment. With children, the tub bath could be readily applied; but for adults he preferred the wet compress, because it was much less disturbing. When tubbing was used for children, one could begin with a temperature of 95° F., and reduce it according to the case. It should be continued a shorter time than in typhoid fever, say ten minutes, and repeated in three or four hours. The cold compress used for adults covered the back and front of the chest, was wrung out of water at 60° F., and was repeated every half-hour or hour, according to the case. A higher temperature than 60° F. might be used if there was much jactitation and excitability. If there was delirium with depression, the compress could be preceded by dashing on of cold

water. The author attributed much of the benefit to the tonic effect of the cold compresses upon the nervous centres, and to relieving the heart by dilating the surface capillaries. It also acted by reducing the temperature and increasing elimination, whereby the toxins were cast out of the circulation. The action was very different from that of warm poultices.

Barth⁷ advocates a return to the plan of treating pneumonia by large doses of **Digitalis**, as first recommended by Traube in 1850. He formulates the following rules : (1,) If the patient is strong, under forty, with no concomitant organic disease, preference must be given to the treatment by baths ; (2,) Under opposite conditions, especially when the heart is feeble, digitalis should be given in doses of 47 to 84 grains of the powdered leaves a day, exhibiting it every two hours infused in water with the addition of rum and syrup of orange peel. Slight vomiting and vertigo are not contraindications, but the treatment must be continued till the pulse becomes abnormally slow or irregular. He doubts whether the enormous doses given by Petresco are free from risk, and whether the artificial lowering of temperature by them is of real value ; 45 grains a day of the powdered leaves should be the maximum dose.

The digitalis treatment of pneumonia was fully discussed in the "Annual" for 1892.

As a cardiac stimulant and tonic, **Strychnin** is inferior only to digitalis, and is of the utmost value when there is exhaustion in pneumonia. It is best administered hypodermically in doses of $\frac{1}{80}$ to $\frac{1}{20}$ of a gr. every two, three or four hours, according to the urgency of the case. The immediate effect of strychnin is sometimes most marked, the patient who previously was in a state of collapse will become conscious, and the pulse which may have been imperceptible will regain volume and power. Indeed, with the aid of strychnin subcutaneously and the inhalation of oxygen, cases of pneumonia which were apparently hopeless, may recover. Dr. F. W. Thomas⁸ recommends the administration of $\frac{1}{100}$ to $\frac{1}{80}$ of a grain of **Nitro-Glycerin** alternately with the strychnin. **Atropin** in doses of $\frac{1}{160}$ to $\frac{1}{80}$ of a grain given hypodermically, has a powerful stimulating effect upon the vasomotor centres, and is therefore indicated in those cases in which collapse occurs or is threatened at a time of crisis, at which period, moreover, its power of checking excessive sweating is an additional advantage. **Caffein** has been found useful in small doses when it is desired to overcome stupor.

In last year's "Annual" attention was directed to the use of **Pilocarpin** in pneumonia. Further experience is not in favour of the

drug ; thus, Bliomonay,⁹ after employing it in sixteen cases has arrived at the following conclusions : "Pilocarpin administered on the third or fourth day of the illness exercises no abortive influence over the disease, the attack running on uninfluenced in its duration."

Casati¹⁰ with the idea that **Creasote** is a cardiac and nervine stimulant was induced to try it in a series of cases of pneumonia. He found that the cases thus treated recovered more rapidly and more thoroughly than those treated in other ways. He pushed the drug freely, but never saw any unpleasant symptoms follow its use.

Bassi¹¹ has treated six cases of severe acute double pneumonia by endo-venous injections of a solution of **Chloride** and **Bicarbonate of Sodium** : of the six cases, five recovered and one died.

Dr. M. V. Ball¹² speaks favourably of **Ice** in pneumonia of children. He writes : "If the ice is now applied in the form of an ice bag the cough is relieved, the fever becomes more moderate, and the pulse stronger. The ice is well borne and never have I met with any objections on the part of the parents. The bag is left on constantly day and night for the first seventy-two hours, and then for periods of half an hour, with intervals of rest of half an hour until the crisis."

REFERENCES.—¹"Amer. Med. and Surg. Bull.," Dec. 26, 1896 ; ²Ibid., Dec. 26, 1896 ; ³"Amer. Journ. Med. Sci.," Jan. 1897 ; ⁴Ibid., Jan. 1897 ; ⁵"Münch. med. Woch.," No. 32, 1895 ; ⁶"Med. Rec.," Dec. 12, 1896 ; ⁷"Sem. méd.," July 22, 1896 ; ⁸"Columb. Med. Journ.," No. xvii, 1896 ; ⁹"Rev. de thérap. med.-chir.," Dec. 1, 1896 ; ¹⁰Epit. "Brit. Med. Journ.," May 8, 1897 ; ¹¹"Brit. Med. Journ.," July 18, 1896 ; ¹²"Philadel. Polyclin.," Oct. 10, 1896.

PNEUMOTHORAX.

F. de Havilland Hall, M.D., F.R.C.P.

The subject of pneumothorax has not been referred to in the "Annual" for some years. A brief review of its principal features and treatment will therefore be probably not unacceptable.

Clinically, cases of pneumothorax, excluding those of traumatic origin, may be roughly divided into two groups : (1.) Those occurring in persons with damaged lungs, chiefly in connection with phthisis ; and (2.) Those occurring in the apparently healthy. The prognosis in these two sets of cases is necessarily very different. According to the careful statistics collected by Dr. Samuel West,¹ "the general mortality ranges somewhere about 70 per cent.," whereas in cases of pneumothorax occurring in the apparently healthy, recovery seems always to result ; for instance, in thirty-one cases of non-traumatic pneumothorax (twenty-one collected by West,² and ten collected by myself³), there was no fatal case recorded, and about five or six weeks was the average period in which recovery took place. The great

majority of these cases occurred in young adults, and almost invariably males. The predisposing cause of the pneumothorax is probably the breaking down of a small tuberculous mass before a secondary pleurisy has had time to set up adhesions; the immediate exciting cause is usually some strain. The symptoms vary very much, according to whether the pneumothorax is complete at first, or is only gradually developed. In the first instance the patient complains of severe pain in the side, intense dyspnœa, and may become collapsed. When the pneumothorax is gradually developed the symptoms are much less severe; indeed in some cases the patient has been able to continue at his occupation in spite of having only one lung to breathe with. The physical signs are those ordinarily noted in pneumothorax.

In commenting on the cause of death in the ordinary form of pneumothorax, Dr. West writes: "The real mortality is difficult to arrive at, for it often happens that the patient gets over the pneumothorax, possibly even recovers completely from it and yet dies before long either from the diseases which caused the pneumothorax, or from the results to which the pneumothorax indirectly led. The causes of death must be dealt with in three groups: The first, in which death is the direct result of the disease; the second, in which it is the indirect result of it and due to the complications which follow—*e.g.*, empyema; the third, where it is the result of the original disease—*e.g.*, phthisis—to which the pneumothorax itself was due, the pneumothorax being at the most but a more or less serious complication, accelerating possibly the end, though not itself entirely responsible for the result."

The immediate risk to life is always great, and is greatest during the early hours and days of the disease. Nearly one half—46 per cent.—die within the first week, death in these cases being usually due to suffocation, though death from shock has been recorded. As regards the question of the treatment of pyo-pneumothorax Dr. West is of opinion that the early removal of pus by modern methods is advantageous in many cases. Pneumothorax occurring in the apparently healthy is best treated by keeping the patient in bed, and giving saline aperients to unload the portal circulation and to prevent straining at stool. In exceptional cases aspiration may be necessary in order to relieve excessive dyspnœa.

REFERENCES.—¹"Lancet," May 8 and 15, 1897, ²"Clin. Soc. Trans.," vol. xvii; ³*Ibid.*, vol. xx.

POLIOMYELITIS (Acute Anterior). *G. Lane Mullins, M.D., Sydney.*

C. A. Altmann¹ describes a remarkable series of fourteen cases of acute anterior poliomyelitis occurring in Port Lincoln, South Australia, in March and April, 1895. No case of the disease had been

PLATE XV.



Specimens of backs before operation for straightening.

PLATE XVI.



M. L. before operation.



M. L. after operation.



T. before operation—showing authors' apparatus for correcting curvature.



T. during operation.

PLATE XVIII



K. before operation.



A. C. before operation.



A. C. prepared for operation.



A. C. during pressure.



A. C. after pressure.

PLATE XX.



Finished—showing suspension.



Showing lordosis to prevent intra-articular pressure.

met with in this district since 1887, nor have any appeared since. In two instances two members of the same family were attacked in rapid succession. All the patients, except one, were over three years of age. A somewhat remarkable coincidence was noted at the time. In January the local council issued instructions that during the months of March and April simultaneous efforts were to be made for the destruction of rabbits throughout the whole district. The general method adopted for this purpose consisted in laying phosphorized pollard, and about 200 lbs. of white phosphorus were sold in the district. In all the houses (except one) where the epidemic appeared phosphorus was being used. At the same time also, several cases, in adults, of a mild form of phosphorous poisoning occurred.

TREATMENT. — **Electricity, Massage,** and the exhibition of small doses of **Strychnin**, either *per os* or subcutaneously.

REFERENCE.—¹“Aust. Med. Gaz.,” April 24, 1897.

POTT'S DISEASE (Obliteration of the { *Robert Jones, F.R.C.S.*
Deformity in). { *A. H. Tubby, M.S., F.R.C.S.*

References more or less vague are found in the writings of the old surgeons to forcible methods for straightening backs; but it is not always easy to understand, whether they allude to Pott's disease, to lateral curvature, or to fracture-dislocations. We are, however, quite justified in assuming that at all times surgical tradition has been averse to forcible methods.

We believe that the cases now reported are the first performed in this country, and that their treatment is based, with certain modifications, upon lines quite lately advocated by Calot, of Berck-sur-Mer, and Rédard, of Paris. We desire rather to supply a few practical hints which will perhaps be useful to surgeons desirous of practising it, than to advocate this novel treatment; and further to place on record the immediate results obtained in over fifty cases.

There are such advantages in the obliteration of a hump that most would feel justified in accepting a risk. For without dwelling either upon the æsthetic reasons which are cogent, or upon the dislodgement and cramping of organs which at times give rise to serious complications, we must remember that the position of the column above the angle is such as to always tend towards the increase of deformity. It is impossible, short of recumbency, to ensure efficient fixation, and to lie upon a sharp flexion angle is next to impossible. With a straight spine fixation becomes very simple. In our choice of cases for operation we decided to undertake whatever presented, unless very strong reasons appeared to the contrary. Some of the

children were comparatively robust, some weak, some were well clad with soft tissue, and others emaciated. Out of fifty-six cases there were but two deaths, one under circumstances very unsatisfactory, as little light was thrown upon it by an imperfectly performed *post-mortem*, and another from epilepsy five weeks after operation.

The patient who died first came from a distance. She was wan-looking and small for her years. When brought into the theatre we noticed she had a rash not unlike that of scarlet fever. We sent her back and isolated her. The rash disappeared the same day and did not appear until the morning of operation the following week. No regard was paid to it, and the reduction was proceeded with. The vertebræ involved were from about the sixth to the ninth dorsal. The reduction was effected with facility, and she was placed in a plaster corset. For three days she was quite well, and then her temperature rose to 100, and her pulse became a little rapid. As she was constipated we ordered some calomel, and for two days her bowels were very relaxed, and she vomited several times. On the fourth day the vomit was sterco-raceous, and, fearing that some intestinal adhesions to the spine might be found, an exploratory abdominal section was performed on the sixth day. Nothing abnormal was to be seen or felt, and the wound was closed. The vomiting continued, the temperature rose to 102, and in twenty-four hours the little patient expired. Unfortunately we were not at hand when the *post-mortem* was made, or we might have managed to secure the specimen. The abdominal organs were healthy; there was no discoloration nor distension of bowel, and no obstruction. There was no peritonitis and no adhesions to spine. The bodies of the vertebræ could be distinctly felt; there was a thickening in the neighbourhood of the curvature, but apparently no tearing of soft tissues in front. There was no collection of blood nor pus. The mesenteric glands were enlarged, and on section proved to be tubercular. The cause of death was therefore left a matter for conjecture.

If we determine upon forcible reduction certain details as to the preparation of the patient seem very necessary; more especially if the plaster corset, recommended by Calot, be applied. For two or three days the diet should be cautiously prescribed with a view to supplying nourishment, and avoiding waste concretion. The bowels should be thoroughly well opened, so that, if necessary, abdominal pressure can be applied by the hand without risk. The bladder should be emptied.

For reasons which need not be dwelt upon, the skin should be

deodorized and disinfected, and the head should be shaved. If we are to avoid insect life the scalp must be treated for a sufficient time. An assistant should prepare the traction bandage. This consists of two linen bands, a yard long; the centre of one piece is placed round the occiput, the centre of the other round the chin. They meet beneath the ear on each side, and at this point are firmly fixed by safety-pins. The free ends are knotted, and an assistant takes a loop in each hand. More conveniently still, these loops may be attached to the hooks on the crossbar of a Sayre's apparatus. These linen bands should be of equal length, otherwise the head will not be pulled in line with the spine. They should be fully a yard long in order that the assistant who controls the head may be well out of the way of the anæsthetist. This traction is quite essential, as one cannot sufficiently long or powerfully act on the spine by grasping the head with the hands. The bandage under the chin is also of service in facilitating breathing during anæsthesia. In addition to the assistant who controls the head six others are needed: one for each arm, one for each leg, one for chloroform, and one to directly assist the operator. Chloroform having been administered, at a given signal steady traction must be exercised. The patient, if he be small, need not be supported by the chest, nor pelvic rack. A child of two and a half years requires a pull of 220 kilos before his neck is dislocated. Traction therefore is measured, if necessary, by dynamometer. Roughly speaking, five men pulling with a force that soon tires rarely exceed 70 kilos, so that the danger of this mishap is after all but small. It is, however, important that all should pull together and that none should jerk, more especially the assistant who controls the head. In a number of cases, particularly in curvatures high up, simple traction alone will reduce the deformity. If it should not, then direct pressure must be applied to the hump. An assistant places his hand beneath the abdomen with sufficient power to feel the bodies of the vertebræ. It is to anticipate this pressure we have advised a careful diet and an empty bowel. This support to the vertebræ from the front is a check upon the surgeon above, who presses sufficiently, if it can be done safely, to reduce deformity. The force required is sometimes great, and in a large proportion of cases reduction is accompanied by a crackling, which is readily appreciated. In only very early curves is reduction absolutely complete; if by complete we mean that no trace of thickening remains. In the more mature deformities, either at one, two or three sittings, the curve is reduced by fully three-fourths its bulk. We think it prudent in the case of very pronounced curves to reduce either in two or three stages rather than at one sitting. More

especially is this the case if the effort be accompanied by much crackling, or be much resisted. Our experience in the obliteration of articular deformities favours the division of such operations into stages, and whenever we have to deal with a firm flexion deformity in a tubercular hip of many years' standing we are often only able at the first sitting to partially reduce it ; but on maintaining for a week or a fortnight this partial reduction we can, with much less force, complete the operation. This is also true of spines. Less force is needed, when after a period we resume hostilities, than would have been the case had we endeavoured to complete matters at the one sitting. Calot and Rédard, who have alone to any extent practised this method in France, use the plaster of Paris corset, so applied, they argue, as to maintain the extension by means of a direct pull upon pelvis and occiput. In a pamphlet we have just received from Rédard, of Paris, giving the results of the treatment of thirty-two cases, we note that he has commenced to use an apparatus not unlike a Phelps' box, the child lying prone while pressure is directly applied to the seat of deformity.

The plaster corset of Calot is applied in the following manner : The surgeon places an assistant to keep up pressure on the lately prominent vertebræ, this pressure to be maintained during the application and drying of the plaster corset. Strips of wadding are placed to interlace one another at the level of deformity. Then the chest, abdomen and head are covered by cotton wadding bandages to the thickness of about an inch. Plaster bandages are then rolled round, so arranged as to make powerful compression upon the deformity, extension of the spine being not for a moment relaxed. The bandages should be soaked in hot water to ensure rapid drying. In order to complete the cervical and cranial part of the apparatus one can leave the child in the horizontal position, but it is simpler to effect whilst the child is suspended with the head erect on the ordinary apparatus. The child therefore hangs by suspension strips, which we have described, whilst the surgeon rolls the plaster bandages around the neck and head, only leaving the face exposed from the eyebrows to the chin.

Personally we have no love for this huge, cumbersome apparatus which requires so much trimming when applied, and which, if quite effective, is rarely comfortable for long. It is supposed to last for six months, but makes no provision for growth, and in six weeks is usually infested by vermin. To those who intend to use it, however, we would recommend certain modifications to which we have already hinted. Disinfect the patient, shave the head, use tarry tow instead

of cotton wadding, and apply pressure on the hump by means of boiler felt. These precautions will tend to modify the contents of the corset lining.

But these do not complete the objections, for it is most difficult to avoid pressure sores over the prominent vertebræ, and its cost and trouble produce no balancing good. Again, we very much question whether extension of the spine can be maintained by it, as Calot claims, without discomfort which no child could tolerate. Add to these objections the very serious one that would be sure to face us should there be any difficulty during chloroform administration. To those of us who have had to take one of these corsets off, the thought of the delay at such a time is a little more than disquieting.

Believing, as we do, that hyperextension is a more important factor in the prevention of Pott's curvature than any traction that can be tolerated, we have modified the double hip splint in such a manner that when the patient lies upon it the bodies of the vertebræ cannot possibly fall one upon another. By this means superincumbent body weight with its attendant evils is avoided; the patients are comfortable and clean, the spine can be watched, and from time to time, pressure can be suitably modified, and what is very important in a busy hospital, an immensity of labour is saved.

Although in most cases one notes a tendency to the recurrence of the curve, it is after all but slight, and may easily be overcome by gentle traction. It merely means we cannot by any apparatus maintain the traction which the deformed spine needs for reduction.

One drawback to the method of forcible reduction is its cost. If we have to engage seven or eight assistants every couple of months the limitation to its utility is assured. In *Plate XVII* a rack will be noted which we have devised in order that one assistant only would be needed. It requires further modification and will, we think, effect its purpose. A simple method of extension tested by dynamometer could be arranged by applying pulleys to the feet and fixing the head to a horizontal bar, with two body racks to facilitate bandaging. These are technical details which time will perfect.

In some cases we have operated without chloroform because of our dread of accident. Although we are lucky enough not to have had grave troubles, some of the patients have given us trying moments. In many cases we have performed the second operation without it, and in no case does the pain appear to have been very great.

Rédard in his pamphlet refers to having reduced one hump of two years' standing. By this one gleans he would have excluded many of the cases which we have treated where the deformities are of far

older standing. Further experience is needed to decide where we cross the line of prudence. It is, however, more than satisfactory to note the absence, in such advanced cases as ours, of serious immediate consequences.

Out of fifty six cases which have been tabulated, thirty-one were males, and twenty-five females. Their ages ranged from eighteen months to twenty-two years. Their curves had existed from six months to six years. Eight little patients had already recovered from one or more attacks of paraplegia. Seven had paraplegia at the time of operation, and three of these recovered after operation, apparently as the result of operation, and three were very much improved. Many of the cases have been complicated with abscess ; on only one was the operation performed while abscess was present. Nineteen out of fifty-six cases gave a distinct history of trauma. Two of the curves were in the cervico-dorsal region ; forty-five were in the dorsal ; six in the dorso-lumbar, and three in the lumbar. Of the reductions thirty-five out of the fifty-six might be looked upon as complete at the first sitting, and of the rest it may be said that either other operations were required or it was thought inadvisable to use sufficient pressure to completely overcome the hump. It is interesting to note that four cases of paraplegia were immensely benefited by the reduction, and that in another adult case lost sensation was recovered over a large area. In not one instance was there any immediate complication such as paralysis, and with the exception of the death under unexplained circumstances, and another patient who died from epilepsy five weeks after operation, no serious effect has followed.

The curves we find best suited for this method are : (*a*,) Those occurring in the young ; (*b*,) Those in which disease is active ; and (*c*,) Those where the angle of deformity is changing ; (*d*,) In those cases where paralysis is present and, as an alternative to laminectomy, which in our experience has often failed to relieve the pressure point.

In young children slight traction often suffices, and less force is needed where disease is active than when the consolidating processes have nearly ended. One has just cause to hope that an angle which is increasing, more rapidly than the growth-rate will explain, can with tolerable facility be reduced.

With one or two exceptions, we have avoided curvatures in the cervical region, for reasons which will not require emphasizing.

Although we have successfully reduced ankylosed vertebræ, we think it is a much more risky operation in such cases than where this process is not complete. We should feel it our duty to fully explain its dangers to those concerned. Should, however, we decide to operate

upon an anchylosed case and succeed, recovery will be much more rapid than in the case where disease is active. We think it unwise to operate where large lumbar abscess exists, and this not so much because of the abscess, as of the difficulty with such complications in maintaining a hyper-extended recumbent posture.

The curves most easily reduced are the mid-dorsal, because of the excellent leverage they permit; and curves involving several rather than few vertebræ.

Very rarely has it been necessary to press our hardest upon big curves, but on several occasions small knuckles have required force. The age of the patient is not of such importance as the duration, character, and location of the curve. We should not hesitate to attempt the reduction of any deformity occurring in early manhood, provided only the angle were a changing one, or the disease of short duration (*Vide Plates XV—XX*).

Despite the fact that our experience is too limited to predict unqualified success to this most fascinating departure in surgery there are lessons to be learnt. The diseased spinal column is no longer too sacred to be touched. If we cannot with precision foretell ultimate results, we know that the immediate ones do not end in tragedy. Above all we may rest assured we have in our power a method in early cases to prevent and to obliterate deformity, for while the spine is kept in the position of lordosis the vertebral bodies will have every mechanical inducement to resist deformity.

PREGNANCY.

Thomas More-Madden, M.D., F.R.C.S., Dublin.

Diagnosis.—Parke,^{*} of Philadelphia, confirms some researches made by Gray, of Richmond, U.S.A., as to the possibility of diagnosing pregnancy within twenty days of its occurrence by the following convincing test: A portion of urine is taken, to which is added $\frac{1}{3}$ part of Tyson's magnesian fluid; in twenty minutes a sufficient quantity of phosphates will have been thrown down to furnish material for microscopical examination. (Tyson's fluid is composed of 1 part each of ammoni hydroch., mag. sulph., and aqua ammoniæ, and 8 parts distilled water.) "The triple phosphates lose their feathery appearance, the change beginning at the tip and progressing towards the base of the crystal. One side only may be affected, or both, leaving only the shaft of a few fragments adhering. The shaft assumes a beaded or jointed appearance. These changes commence within twenty days of conception, are most marked in the earlier months, and almost absent in the later months. When the death of the fœtus occurs, the phosphates resume their normal appearance." The author has examined twenty-five cases

by this method and believes that Dr. Gray's statement is worthy of credence, and that the evidence is more marked in the earlier cases. In 90 per cent. of cases examined within the first two months of pregnancy changes more or less characteristic were noted, whilst in those beyond eight months, little or no change could be detected. The diagnosis must rest, not on the appearance of a few imperfect crystals, but rather on the shrunken and broken-up appearance of the general mass.

Eclampsia.—Dr. T. Marx² divides the toxæmia of pregnancy into: (1,) That complicating heart disease; (2,) Acute pregnancy nephritis; (3,) Acute exacerbation of a chronic nephritis; (4,) Acute toxæmia in which neither albumin nor casts appear, which he terms "*urinæmia*."

In cases under heading (1) he advises constant administration of **Heart Tonics**, and where these fail, or in any case where albumin and casts appear, induction of premature labour, preferably in one sinking under chloroform, the cardiac affection being no contra-indication to giving chloroform.

In cases under heading (2) we have a full and complete therapeutic measure—one not nihilistic; **Rest, Milk, Hot Sweating**, heart tonics in full doses (those that irritate kidneys, like digitalis, iron, etc., contra-indicated), **Caffein, Nitro-Glycerine, Sparteine**, are amongst those advocated.

Pilocarpin he mentions only to condemn. He advises early operative interference, and, as stated above, he considers it indicated when, in spite of vigorous scientific treatment, the amount of urea excretion remains stationary or progressively diminishes.

After labour large doses of **Morphine** may be used where the kidneys are active, to control convulsions, further assisted by the inhalation of chloroform.

Under heading (3) we have a large class of cases in which the continuous administration of from $\frac{1}{100}$ to $\frac{3}{100}$ of a gr. of nitro-glycerine from the first months of pregnancy gives brilliant results. Marx has succeeded in carrying a number of these women to term without any bad symptoms.

With this treatment he claims it is not necessary to restrict food, since he advises a liberal diet throughout pregnancy.

In class (4), viz., cases called *urinæmia*, the diagnosis is of great importance. The diagnosis can only be made when symptoms pointing to a toxæmia be present and a diminished urea excretion is found. The only treatment advised is prompt emptying of uterus, and then treatment as above according to indications.

Dr. Edgar³ advocates as prophylactic measures: (1,) The reduction

of nitrogenous food to a minimum ; (2,) Limitation of formation of toxic materials in the body itself.

The first indication is best met by an exclusive milk diet for a time, and afterward by the cautious addition of fish and white meats. The second indication is to be met by securing an abundant supply of pure air and water, and by the use of moderate exercise or light calisthenics. In order to keep the bowels in proper condition, it is well to give every night a dose of colocynth and aloes and a saline in the morning. In cases of eliminative insufficiency it will be found very advantageous to administer at bed-time, twice a week, a tablet containing 1 gr. each of **Calomel**, **Digitalis**, and **Squills**, and $\frac{1}{10}$ gr. of the **Muriate of Pilocarpin**. Some preparation of iron will probably be called for, such as Basham's mixture. The body surface should be protected from chilling influences by proper clothing. The foundation of the preventive treatment of puerperal eclampsia is to be found in the use of a **Milk Diet**.

Dr. E. R. Squibb,⁴ of Kings County, recommended the employment of the official fluid extract of **Veratrum Viride**, in doses of 5 minims every ten or fifteen minutes, until the pulse had been affected by it ; after this, the drug should be administered for some time longer, but in diminished doses. The pulse was sometimes apparently feeble, but even here the veratrum should not be withheld, but given in smaller doses.

Charpentier,⁵ urges the most thorough examination of the urine of each pregnant patient. Upon slight indications of albuminuria and diminished excretion he would limit the patient's diet strictly to milk, relying largely upon this for the prevention of eclampsia. In the actual presence of convulsions, if the patient was robust and cyanotic, he would bleed. He would also give **Chloral with Milk** through a stomach-tube. The inhalation of **Chloroform** and the subcutaneous injection of normal saline solution were also of value. If the patient was not robust and little cyanosis had developed, he would content himself with the use of chloral. In most cases labour came on spontaneously, and delivery followed without assistance. If birth did not end spontaneously, version or forceps is indicated. If the child had perished, craniotomy should be chosen. He did not believe in rapid and forcible dilatation of the birth-canal, but would wait until such could be accomplished without violence. The induction of labour or abortion is rarely indicated in his experience in this condition. Cæsarean section could only be performed amid the most favourable surroundings and in rare cases.

Ferré⁶ insists that the **Milk Treatment** is most efficient from a

prophylactic point of view, though it does not necessarily cause the other alarming symptoms, besides the fits, to vanish.

Some obstetricians have very naturally given up milk diet on account of persistence of albuminuria and œdema. Such a step is a mistake, for if the treatment be continued labour will, nevertheless, proceed without any fits coming on.

Appleby⁷ employed **Guaiacol** successfully in two cases; 40 or 50 drops were poured on the abdomen and gently rubbed in.

Clowes⁸ employed **Hyoscin** (gr. $\frac{1}{100}$) hypodermically with success in a single case.

Extra-uterine Pregnancy.—Some interesting facts are brought out by Dr. Andrew McCosh⁹ in a report of fifteen cases on which he has operated during the past four years.

The youngest patient was twenty-three years of age, the oldest thirty-nine. Three were nulliparæ. Twelve had previously been normally pregnant, nine having borne one or more children, three having had miscarriages only. Five had complained of more or less pelvic pain prior to the ectopic gestation; ten gave no history of special distress in their pelvic organs. All had suffered from pain. In three the pain had been slight, in twelve severe. All had skipped one or more menstrual periods. In fourteen there had been irregular uterine bleeding; in one there was no history of bloody vaginal discharge. In eight there had been signs of shock on one or more occasions indicating rupture, in two of these amounting to severe collapse. In seven there had been apparently no sign of shock. Seven had considered themselves pregnant; eight had not suspected the existence of pregnancy. In two cases the fœtus was in the tube, which was unruptured (eight weeks and ten weeks). In five rupture into the broad ligament had occurred (less than three months). In eight the fœtus or its remains was found in the peritoneal cavity. The duration of the pregnancy was under fourteen weeks in thirteen cases, over four months in two cases (four and a half and six and a half months).

Dr. Kelly¹⁰ has recently brought forward his method of treatment by **Vaginal Puncture**, and claims for it rapid convalescence, together with a minimum amount of suppuration and mutilation of normal pelvic structures.

He now operates as follows: After an accurate diagnosis, outlining the sac and its relations by abdominal and rectal palpation, and after careful vaginal palpation to determine the proximity of the sac to the upper vaginal wall, a point is located behind the cervix in the vaginal fornix close to the sac and a pair of sharp scissors are plunged upwards

in the direction of the pelvic axis. The scissors are then opened, and some of the fluid blood usually trickles out at once. Larger scissors are then introduced if necessary, and the opening widened by withdrawing them with the blades open. It is important to have a large opening both for the purpose of getting two fingers in to clean out the sac, and for good drainage afterwards. The sac must be delicately cleaned out, and everything brought away down to the shell of the sac and surrounding adhesions. In one case he brought out a well-defined Fallopian tube cast. Irrigation follows, after which the sac is plugged with gauze, which is left in for several days or longer, and then the wound is washed out daily until it closes. There is one danger to which the patients are liable—hæmorrhage from the degenerated villi. His practical experience has shown that this is not imminent. In nine cases there was no hæmorrhage of any moment after cleaning out the sac. In one, however, it was so active that he had to open the abdomen and extirpate the sac. Anyone, therefore, who undertakes vaginal puncture must be prepared to perform laparotomy. Another danger is that the sac may rupture into the abdominal cavity, as the walls are quite thin in some cases. This has not occurred in any of his cases, but in one the douche nozzle was thrust through the sac into the abdominal cavity and a couple of quarts of boric solution introduced. He had to open the abdomen and wash out the solution. The patient made an excellent recovery. He regards his plan as not only an important departure in the treatment of ectopic pregnancy, but also as an index of the line of progress in the general domain of gynæcology. He uniformly treats all pelvic suppurations in the same way where he thinks he can get at the pus and establish good drainage. The present method is, he says, to remove the uterus by the vagina. He always insisted that he could get as good drainage without doing this.

Theophilus Parvin, M.D., Philadelphia.

Dr. L. Frankenthal,¹¹ from his experience with thirty-seven cases, presents these among his conclusions. The pregnancy is tubal. Treat conservatively only those cases not seen until some time after rupture, and when one feels fairly certain that the fœtus is dead, and alarming symptoms have disappeared. Operation during shock is not contra-indicated. Vaginal drainage is preferred in all cases. For the relief of shock, transfuse normal salt solution, when the amount of blood lost is not too great, and if the hæmorrhage has not occurred repeatedly at long intervals; in the latter case, transfusion of blood is indicated. In some cases, to shorten the operation,

clamps may be employed, the clamps being left *in situ*. If the placenta cannot be removed, tampon and drain.

Von Herff¹² concludes from his study of these cases that in removing ectopic gestation-sacs which are complicated by adhesions, it is important, whenever possible, to ligate the uterine and ovarian arteries. An attempt should then be made to shell out the sac, beginning at the periphery of the placenta, using clamps and ligatures to control bleeding. The aperture left should be tamponed with gauze. In rare cases the site of placental attachment must be compressed by a running stitch; compression of the aorta must be employed or removal of the uterus, with application of clamps to the bleeding vessels. Gauze packing is especially valuable where oozing exists or secondary bleeding is feared.

Thomas More-Madden, M.D., F.R.C.S., Dublin.

Retroversion of Gravid Uterus.—Murdoch Cameron¹³ reports a case of retroversion of the pregnant uterus and describes his treatment. He has found that disturbances of the bladder are among the first symptoms of this condition. Over-distension is frequently present. In most cases the uterus can be replaced before the third month, if an anæsthetic be given. In a small number of cases impaction with adhesions is present, and extirpation of the uterus or treatment by abdominal incision is required. In fatal cases retention of urine becomes complete. Fever is present and bearing-down pains at the pelvic outlet, with great restlessness, delirium, intermittent pulse, coldness of the extremities, convulsions, and possibly rupture of the bladder. Previously Cameron had never met one in which reduction was impossible. The patient was a multipara who had enjoyed good health. The first symptom noticed was disturbance of the bladder, retention of urine being complete, with vomiting and constipation. The bladder was emptied by catheter, and a considerable amount of blood was found in the urine. The patient was seized with labour pains and hæmorrhage. She was removed to a hospital. Upon examination under chloroform the os uteri was found above the symphysis. The bladder was irrigated, when blood clots and shreds of mucus were removed. A blood-cast of the ureter, some fifteen inches long and about the thickness of a quill, was expelled. As the patient's condition was becoming critical, abdominal section was performed. In order to empty the bladder an opening was made upon its anterior surface outside the peritoneum. A large quantity of bloody urine and clot was extracted. Its walls were very much thickened. An assistant pressed the uterus up through the vagina while the operator raised the womb with great difficulty out of the pelvis. The bladder incision

was sutured with fine silk and a double catheter was left within the bladder. The abdominal wall was closed in the usual manner. The patient made an uninterrupted recovery and was subsequently delivered of a healthy male child. Cameron calls attention to a serious complication in these cases which follows the sudden relief of a suddenly distended bladder. If urine be rapidly removed, hæmorrhage is apt to follow, and hence the bladder should be slowly emptied or boric solution injected as the urine is withdrawn. A blood-cast of the ureter has seldom been observed.

Vomiting of Pregnancy.—Torre¹⁴ successfully treated three unusually severe cases by applying the **Ichthyol Tampon** to the cervix uteri.

The nutritive qualities of **Somatose** led Lutand¹⁵ to employ it in this condition. He reports a case which resisted all ordinary measures, and the patient being exhausted the induction of labour seemed to be indicated. Somatose in teaspoonful doses well diluted, was retained by the stomach, and to its continued use the recovery of the patient was apparently due.

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PROCIDENTIA RECTI. (See "Rectum, Prolapse of.")

PROSTATE GLAND (Diseases of). *E. Hurry Fenwick, F.R.C.S*

Catheterism, Vasectomy, Castration or Prostatectomy.—Dr. J. W. White,¹ who introduced the operation of castration for hypertrophied prostate, in a lecture recently delivered states that as oöphorectomy was much abused a few years ago, so is this operation now, and that a similar result in the treatment of appendicitis is threatened. He never encouraged the idea that his operation was a universal panacea. If the patient is not very old, retains his sexual power, has sound kidneys, and only a moderate amount of residual urine, the operation is out of the question and only catheterism is required. If pain is marked and resists small doses of bromide, belladonna, phenacetin, etc., that may be an indication for operation. In such cases vasectomy should be selected. If the residual urine reaches 12 ozs. and if it does not diminish under catheterism, the dangers from backward pressure on the kidneys increasing atony of

the bladder, and cystitis are so great that vasectomy is again indicated. In patients with larger prostates, with 8 or 10 ozs. of fœtid or mucopurulent urine, with frequent micturition, and pain on the introduction of the catheter, some operation—vasectomy, castration, or prostatectomy—is indicated. The younger the patient, the greater the sexual power; the sounder the kidneys, and the better the general health, the more the surgeon should incline towards prostatectomy. If the patient is somewhat older and the sexual power is becoming enfeebled, vasectomy is to be chosen. Still greater age, with marked renal disease or great failure of health, indicates the same operation. If, however, with the greater age and distinctly lessened sexual power the renal and general conditions are good, castration promises the most benefit with the least mortality. In the worst cases, in which the prostate is enormous, the cystitis excessive, the bladder dilated and atonied, the retention absolute, the kidneys inefficient, and catheterism difficult and occasionally impossible, any operation involves risk. But this must be taken. Castration in these cases is the best procedure. It will occasionally fail, but often the improvement is marvellous.

Isolated Experiences in Vasectomy.—Pavone² cites thirty-four cases of prostatic hypertrophy where the vasa deferentia were excised; four of these died of other diseases; in two cases the results were negative; the remaining twenty-eight were either cured or improved. The author believes that when good results do not follow this operation it is because complete obliteration of the vas deferens has not been obtained. He therefore advises that, in addition to excision, the ends of the canal should be twisted, so as to ensure complete closure. In the case reported about 3 cm. were excised and the ends twisted; on the same day the temperature fell, the frequency of micturition diminished, and the vesical tenesmus ceased. On the fifty day the patient could completely empty his bladder. On the fifteenth day there only remained some slight hypertrophy of the median lobe, and after two months the patient kept in the best of health.

Castration in Prostatic Hypertrophy.—The classical method of treating the enlarged senile prostate with its accompanying urinary troubles is so unsatisfactory that it is not surprising that the radical treatment advocated by White and Ramm should have been taken up with enthusiasm. Thanks to this, Bruns³ was able, within two years from the time when the operation was first suggested, to collect one hundred and forty-eight cases. From a careful study of these he arrives at the conclusion that the operation

of castration may be confidently recommended as being likely to bring about a complete cure in the majority of cases, and even where it fails to do this, at any rate considerable amelioration of the distressing symptoms results.

Professor Czerny,⁴ however, very pertinently asks, "What is the position of the surgeon who, after promising relief, if not complete cure to his patient, finds no such result follows? The patient, who but slowly recovers from an operation at that age, finds himself robbed of an important organ, and with his trouble still unrelieved."

Prof. Czerny gives an account of three cases in which he had performed double castration for enlarged prostate, in all of which the result was deplorable. The operation appeared to have no effect on either the hypertrophy of the prostate or the urination, and in one case death from pneumonia occurred fourteen days after the operation. In all three cases the treatment had a very injurious effect upon the aged patients, for they rapidly grew weaker. This was also observed by Bruns.

Socin's⁵ experience is equally bad. Only in one out of eight cases in which he had performed castration could the slightest beneficial result be detected. Nor was he more fortunate in the single case of resection of the vas. Single cases of operation by castration and resection are also reported by Professor Krönlein and Professor Kraske, but with no better result.

Galvano-Cauterization of the Enlarged Prostate.—For circumscribed growth of the prostate, Bottini⁶ advocates incision by the galvano-cautery. He finds that an injection of a 1 per cent. solution of cocain into the urethra is sufficient to prevent all pain, thus rendering a general anæsthetic unnecessary. He has never seen the operation followed by fever, or appreciable hæmorrhage, never had an unfavourable result, or a recurrence of the disease. (The number of cases operated upon by him is not, however, related.) He regards the operation as absolutely free from danger, provided his directions are carefully carried out.

Bottini summarizes the advantages of his method of treatment in cases of hypertrophy of the prostate by division with his galvano-cautery as follows : (i,) The beneficial result follows immediately on the operation ; (ii,) The absence of all danger, even when the urine is fœtid and purulent ; (iii,) The freedom from recurrence ; (iv,) The absence of all unpleasant after-effects of the operation ; (v,) The painlessness of the operation.

An account of three cases operated upon by him with brilliant results is appended

Prof. Czerny has used Bottini's cautery in six cases, and Dr. Frendenberg (Berlin) in two cases, all with excellent results. They both speak most highly of it as a method of treating suitable cases of prostatic hypertrophy.

Cauterization through the Rectum.—Negretto⁷ records four cases of prostatic retention treated with much success by the following method. After thoroughly emptying the rectum the patient is anæsthetized and a rectal speculum passed, the upper part of the bowel is plugged with gauze, and then, under the guidance of the finger, a specially devised hook with graduated stems is passed into the prostate to steady it. The prostate is then cauterized with a Paquelin or galvano-cautery over the extent required. The operation only lasts two minutes. The bowels are kept confined for a few days, and a catheter kept permanently in the bladder for some time. On the sixth or seventh day a purge is given, and at the end of ten or twelve days the catheter is removed, and the patient can urinate by himself. The patients were fifty-six, sixty-two, seventy-four, and seventy-eight respectively, and had suffered from prostatic disease from three to five years on an average. In each case cauterization *per rectum* not only speedily relieved the congestion, but caused a notable diminution in the size of the prostate. The author believes this method to be superior both in its immediate and remote effects to castration or excision of the vas deferens.

Samuel Alexander,⁸ in a paper read before the New York State Medical Association, advocates the following operation: The patient is prepared, when possible, by giving a cathartic the night before the operation, and by emptying the lower bowel by a large enema the following morning. The bladder is washed immediately before the operation with a solution of nitrate of silver (1 to 6,000). The patient being anæsthetized, the bladder is emptied by catheter, and is then distended with borax solution, from 8 to 10 ozs. being sufficient in most cases to bring the organ well above the pubes. The bladder is then exposed by vertical incision between the recti muscles, and two retraction sutures are introduced through its wall. Between these an opening is made into the bladder, large enough to allow the operator to insert two fingers. The bladder and the projecting portions of the prostate can now be examined thoroughly.

The suprapubic opening is then covered with gauze, and the patient placed in the lithotomy posture. A broad median-grooved staff is passed into the bladder through the urethra and held by an assistant. The membranous urethra is then opened by a median perineal section, the floor of the urethra being thoroughly cut from just behind the bulb

back to the apex of the prostate. This must be done thoroughly. The staff is then withdrawn and the gauze removed from the suprapubic wound. The surgeon now washes and disinfects his hands. Two fingers of the left hand are then passed into the bladder through the suprapubic wound, and by these the prostate is pressed downward into the perineum. With the forefinger of the right hand the surgeon begins the enucleation, which is performed entirely through the perineal opening. The fibrous sheath of the prostate covering its posterior and inferior surface is broken into by the finger, and the capsule entered; the entire prostate is shelled out from within its sheath by digital dissection. The inferior and posterior surfaces of the prostate should be first separated from the capsule. The mucous membrane of the bladder and prostatic urethra covering the enlargement, with the underlying muscular tissue, is stripped up from the part to be removed, but is not opened. The lateral lobes are first removed, after which, if there is a middle enlargement or a projecting tumour or tumours, these can be pressed downward into the perineal wound and enucleated in the same manner.

After the removal of all the prostatic growths, the lower wound is flushed with a 1 to 5,000 bichloride solution, a perineal tube is inserted into the bladder, and a rubber drainage tube of moderate size is placed in the bladder above the pubes. The retraction sutures are removed, and the bladder is allowed to drop back behind the pubes. The upper part of the suprapubic wound is then closed by sutures, and a dressing of gauze pads applied, which is perforated to permit the drainage tube to pass.

The after-treatment consists in daily washings of the bladder, the fluid being injected into the suprapubic tube. All urine flows out of the perineal tube. The upper tube is removed on the fourth day, and the lower tube three days later, after which the bladder is washed by catheter through the perineum for a few days. A full-sized sound is passed at the end of the second week, and then every five days until the perineal opening closes. Both wounds have usually healed in the course of five weeks.

Alexander has operated by this method in eight cases with two deaths. The result in the six successful cases was complete restoration of voluntary micturition. The ability to empty the bladder was regained by all but one patient, and in this case the amount of residual urine is now only six drachms.

The advantages claimed for the operation are: (1,) The entire prostate is thoroughly and immediately removed by enucleation; (2,) The mucous membrane of the bladder and prostatic urethra is

uninjured, and the danger from septic absorption is thereby lessened ; (3.) Hæmorrhage is reduced to a minimum ; (4.) The most efficient and thorough drainage is secured ; (5.) The time required by practised hands to perform the operation is comparatively short.

The mortality after prostatectomy is still high—about 18 or 20 per cent. for all operators. It is gradually becoming less as the indications for the operation are better understood.

Alexander believes that prostatectomy promises to be a more satisfactory method of radical treatment than any other yet proposed, provided that the operation is performed before the kidneys have become hopelessly diseased.

Reginald Harrison,⁹ in the Bradshaw Lecture, remarks upon the value of castration in cases of enlarged prostate, where a previous litholapaxy has been performed, as a means of preventing recurrence of stone. In support of the contention he quotes the following case : It was that of a male, aged seventy, who had stone recurrence after lithotripsy on three occasions, at intervals of a year or so. On the fourth time of relapse the urine and bladder were in so foul a state from cystitis and great enlargement of the prostate that a suprapubic cystotomy was performed, by means of which a phosphatic stone was again removed, and the bladder was drained for some time. The patient, however, was intolerant of all the methods that were tried with the object of keeping the wound open by various drainage appliances, and eventually it closed before the latter process was completed. This was followed by a speedy return of all the symptoms of cystitis and the commencing formation of more phosphates. To meet this condition the bladder was again cleared by means of the lithotrite and the aspirator, and double castration was performed. The relief is, presumably, now complete, as the patient has been free of his stone and his symptoms for nearly two years, and has no need either of his catheter or his irrigator.

“It is under circumstances such as these that castration may occasionally find a place in the treatment of recurring stone complicated with enlargement of the prostate. In selecting it, however, apart from other considerations, the surgeon must be reasonably clear in his opinion that the case is not one either of encysted or pouched stone, otherwise, as castration affords no opportunity of making either a digital or ocular examination of the interior of the bladder, a suprapubic prostatectomy would, in the face of these presumed complications, be preferable.”

In the course of the same lecture the author speaks of the results of vasectomy in prostatic hypertrophy. In his experience the results of

vasectomy depend very much on attention to certain details connected with the operation. In the first place it is not well to operate on both vasa at the same time, as any risk connected with the proceeding is increased, and mental effects of a serious nature may follow, such as have been observed after castration. No ill-effects have resulted, in the author's experience, when a sufficient interval was allowed to elapse between the two operations. The interval should be not less than a month. Instances have occurred where the relief following the division of one tube was so sufficient as to render division of the opposite one unnecessary. In some cases the author found that after one vas had been divided the prostatic symptoms subsided at once, and then, after an interval of three weeks or so, began to reappear coincidently with some hypertrophy of the testicle of the opposite side, where the tube had not yet been divided. The second operation was then proceeded with, and it was in the group of cases in which this incident was observed that the most satisfactory results were obtained.

Harrison believes that if the prostate has passed into a fibrotic condition, or if the obstructing third lobe represents in structure a fibrous tumour, the prospects following either castration or vasectomy are unpromising. Here McGill's operation is usually indicated.

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PRURITUS.

T. Colcott Fox, M.B.

In order to investigate and treat a case successfully it is essential at the outset to have a clear and orderly idea of the various possible causes, as they affect the skin as a whole or in certain localities.

De Wannemacker,¹ of Ghent, divides pruritus into (1,) The primary forms which are not associated with an eruption; (2,) The secondary, which accompany or follow some eruption; and perhaps (3,) An essential pruritus, a true neurosis, not dependent on any systemic or local inflammatory disease.

In *primary pruritus* we must endeavour to fix upon the cause of the nervous irritation. A plausible theory is one that attributes it to poisonous products circulating in the blood, either due to retention or special development in the system, or absorption, for instance, from the gastro-intestinal tract. In *secondary pruritus* the treatment is mainly that of the skin disease by which the itching is caused, but

until the cure of the eruption we have to call to our assistance some of the measures useful in primary pruritus.

The most useful general remedies are: (1,) *Anodynes*, such as **Chloral**, **Cannabis Indica**, and **Gelsemium**; (2,) *Drugs having a direct action on the blood*, such as **Carbolic Acid**. Various coal tar products, such as **Antipyrin**, **Phenacetin**, etc., act in both ways. Salophen may be useful, but its mode of action is unknown. He has used it in prurigo, urticaria, seborrhœic eczema and psoriasis in doses of 4 to 5 grammes daily.

C. Boeck² recommends the following formula in dry, itching, inflammatory affections of the skin:—

℞ Talc		Glycerin	20 gme.
Powd. Starch	āā 50 gme.	Lead-Water	100 gme.

This is to be diluted with twice the volume of water, shaken and applied to the skin with a brush or mop, and allowed to dry. The effect of the lotion is cooling, antipruriginous, astringent, and antiseptic. Half of the lead-water may be replaced by a 1 per cent. boric acid solution, especially where the skin is tender. The lotion is contra-indicated in cutaneous affections in which there is fluid discharge.

T. D. Savill³ recommends **Chloride of Calcium** internally, gradually increasing from 20 grammes three times daily, given with orange peel and chloroform water.

Pruritus Genitalium.—We give the following classification of the causes of pruritus vulvæ by Herman.⁴ He divided the causes of pruritus into five classes: (1,) *Adventitious*, due to pediculi, dirt, worms, pessaries; (2,) *Skin diseases*—eczema, herpes, furuncle, follicular, urticarial, and diabetic dermatitis—which had been shown to be due neither to saccharine urine nor to sweat; (3,) *Irritating discharges*—gonorrhœa, cancer, senile endometritis—and also cases where no visible discharge was seen; (4,) *Venous congestion*, due to heart, lung, or liver disease; (5,) *Nervous*. In Class 1 he advised white precipitate ointment for pediculi; absolute cleanliness and changing of material of pessary. Class 2: Eczema usually affected fat elderly women and those who were pregnant; possibly it depended on a parasitic micro-organism; in diabetes it was especially frequent. Treatment in the former consisted in warm hip baths with Wright's liquor carbonis detergens added, and powdering the parts with boric acid. In the latter general treatment was required. Herpes zoster was not amenable to any kind of treatment. Follicular pruritus was best treated by squeezing out the contents of the follicles and applying a germicide lotion, such as corrosive sublimate, 1 to 2000. Urticaria was very rare. Class 3: Irritating discharges should be treated by

sedative and antiseptic washes to the vagina, followed by sedative powders to the vulva, such as a saturated solution of borax and dermatol powder and boric acid. When these failed, a strong carbolic acid lotion, 1 to 7, would in some cases completely cure or give great relief. Class 4: Pruritus was found in pregnancy and in corpulent persons with varicose veins, and those suffering from heart, lung, or liver disease; the treatment was practically the same as in Class 3. In Class 5, pruritus in aged women was sometimes a symptom of degenerative changes in the nervous system; treatment usually failed.

Amand Routh,⁵ in an article on "The Menopause viewed from the Gynæcological Standpoint," recognizes group 1 of the above, and especially mentions kraurosis vulvæ in group 2. To the latter group we may perhaps add the vascular urethral caruncle noted by him. The group of irritating discharges he distinguishes as *irritating vaginal discharges*, as in advanced cancer of the uterus, and *irritating urine*, as in vesico-vaginal fistula, chronic cystitis, acidity, gout or diabetes. The nervous cases he divides into the *pure neuroses*, and the *reflex*, as in early carcinoma cervicis, or with mucous polypus, or prolapsed ovary. Schultz's reflex pruritus from endometritis would come here. Routh has found, where palliative treatment fails, very good results by **Scraping** with a sharp-pronged fork.

Labusquière⁶ adds leucoplakia as a local vulvar cause, and under general conditions gives albuminuria, neurasthenia and tuberculosis. He reminds us that both local and general causes may co-exist.

Locally he recommends the alternatives of very hot (105° to 120°), or very cold (40°) lotions, medicated with antiseptics.

Carbolic Acid may be employed in the following manner:—

R Carbolic Acid	20 parts	Alcohol	25 parts
Glycerin	75 parts	Distilled Water	300 parts

One to four tablespoonfuls of this solution (which contains 1 in 20 of carbolic acid) are to be mixed with a tumblerful of hot water, and the parts bathed in the lotion. **Corrosive Sublimate** is also useful:—

R Corrosive Sublimate	2 parts	Rose Water	40 parts
Alcohol	10 parts	Distilled Water	450 parts

This solution (which contains 1 in 250 of corrosive sublimate) is to be applied undiluted, in the following manner, night and morning: The parts are to be first bathed in tepid water and carefully dried; a small sponge is then soaked in the lotion and passed rapidly over the affected parts so as to thoroughly moisten the surface. This almost always causes a good deal of smarting and burning, which may be relieved by bathing the parts afresh in tepid water. The first is much more painful than succeeding applications, and often a rapid cure ensues.

Hunter Robb⁷ says that if a pruritus of the female genitals does not yield to ordinary remedies approved by experience, an examination becomes necessary. The external genitals are to be searched for skin eruptions, vulvar cicatrices, etc., and it will be often desirable to search for micro-organisms. The condition of the uterus and its appendages must next be explored, and a rectal examination carried out. Finally, the chemical and microscopical qualities of the urine must be investigated. Robb mentions various well-known ointments and lotions, and we note the following points: An abnormally dry vulva calls for lubricating applications. **Suppositories** containing **Opium** and **Hyoscyamus** at night will often relieve the nocturnal exacerbations. He quotes Zweifel's dictum that nothing was any good except a 2 per cent. solution of **Nitrate of Silver**. The removal of acne pustules covering the mucous membrane of the vestibule was followed, in several cases reported by Küstner, by the disappearance of the most obstinate pruritus. Robb then considers the question of excision of the affected area in intractable cases, and thinks it justifiable in certain cases.

Dirner⁸ introduced a discussion at the Royal Hungarian Medical Association by a paper on the "Operative treatment of Pruritus." He admitted as curable the pruritus due to diabetes, and microbes in the vaginal or cervical secretion. The intractable cases (vulvitis pruriginosa) were clinically and pathologically primary. They were due to subacute inflammation of the vulvar integument and fibrosis of the Pacinian corpuscles and other structures. He advocated dissecting of the vulvar integument from the mons veneris to the navicular fossa, taking away the clitoris. The wound was sutured with silver wire and covered with iodoform collodion. It healed by first intention without subsequent tension. Kézmarysky agreed with Dirner's theory of the causation of idiopathic vulvitis pruriginosa. Tauffer found diabetic pruritus, and that due to germs, secondary to leucorrhœa and endometritis hard to cure, but in this Kézmarysky did not agree.

Heidenheim,⁹ of Köslin, strongly recommends: (1.) To make every evening at bedtime a vaginal injection with a solution of **Lysol**, followed by one of warm **Boiled Water**, and lastly by one of **Sublimate**; (2.) To wash the vulva with care, and introduce between the labia majora a muslin compress charged with warm diluted solution of **Tannin** (tablespoonful in a quart of water). Excoriations should be touched with **Silver Nitrate**.

In a discussion before the Berlin Obstetrical Society¹⁰ Rage stated that pruritus was nearly always due to some local cause, and that he seldom failed to cure it by thorough cleansing of the external and internal genitals. In this Martin agreed. The latter shaves the exter-

nal genitals and applies **Flowers of Sulphur**. Flaischer uses solutions of sulphur, varying from 20 to 50 per cent.

Jacobs,¹¹ of Brussels, advises as follows : The parts to be kept scrupulously clean by daily washing with soap and ether. Locally he uses very hot lotions containing $1\frac{1}{2}$ per cent. of **Carbolic Acid**, or **Bichloride of Mercury** (grains xxx in $\bar{3}$ xv distilled water), or painting with 1 in 20 solution of **Nitrate of Silver**, or with freshly made tincture of **Iodine**, etc. The etiological factors, locally and constitutionally, must be studied and dealt with. Lastly, if the case is intractable, the itching parts may be removed.

In the "Brit. Med. Journ." (July 31, 1897) there are a number of suggestions sent in answer to a correspondent. They mostly concern internal and external remedies which have been found useful, and form a long catalogue. We may mention two of a different kind to any referred to in our long review, viz., the application of the **Paquelin Cautery** to the affected area, and the raising of a succession of **Light Blisters** for several weeks over the lumbar enlargement of the cord.

REFERENCES.—¹"La Belgique méd.," Nov. 5, 1896; ²"Monats. f. prak. Derm.,"; ³"Brit. Med. Assoc.," 1896; ⁴"Brit. Med. Journ.," 1897; ⁵"West London Med. Journ.," 1897; ⁶"Ann. de gynécol. et d'obst.," p. 73, 1897; ⁷"Cleveland Med. Gaz.," March, 1896; ⁸"Centralb. f. Gynäk.," No. 5, 1897; ⁹"Berlin. klin. Woch.," No. 2, 1897; ¹⁰"Centralb. f. Gynäk.," No. 18, 1896; ¹¹"Practitioner."

PRURITUS ANI.

T. Colcott Fox, M.B.

Brocq¹ applies a soothing ointment of **Yaseline** and **Oxide of Zinc**, and then powders with **Pulv. Camph.**, 2 parts; **Oxide of Zinc**, 30 parts; **Subnitrate of Bismuth**, 30 parts; **Chalk**, 40 parts. He orders frequent baths with boricated water or tar soap, and finds it useful to introduce at night a suppository of cacao butter containing cocaine and extract of belladonna.

Swinford Edwards² points out that a cause may be discovered, or more often be undetected. It is often very difficult to tell if the alteration of the integument found is primary or secondary to incessant scratching. He classifies the most frequent causes in order of frequency as : (1,) Eczema, simple, gouty, or parasitic; (2,) Constipation with its outcome—piles and fistula—tags of anal skin, the remains of external piles of one variety or another; (3,) Stricture or any tumour pressing on the rectum causing venous obstruction and straining at stool. Stricture of the urethra, enlarged prostate and vesical stone; (4,) Any condition causing an undue moisture of the part, as, for instance, the discharge from a small and often overlooked fistula, or an escape of the rectal mucus through a patulous anus; (5,) Want of

cleanly habits ; (6,) Venereal lesions ; (7,) *Ascarides* ; (8,) Indiscretions in diet, excesses in alcohol, tobacco, etc.

If the cause can be discovered the removal of it should cure the pruritus, if the skin has not become structurally altered. Certain cases of a very intractable kind are classified as neurotic. In cases which have resisted the recognized methods of treatment Edwards advocates a complete and satisfactory forcible dilatation of the anus and the removal of as much skin as seems necessary by cutting and scraping. He gives as favourite applications :—

(1,) $\mathcal{R}$ Liquor Plumbi Acetatis fort. 1 part | Fresh Milk 7 parts

Add the milk to the lead by degrees, stirring the while, to form a thick white paste ; to be applied on cotton wool and retained *in situ*.

(2,) Ung. Crozalæ (F. Rogers, 327, Oxford Street, London, W.) which he believes to be a combination of vinolia and lanolin.

(3,) Ung. Picis Liquidum applied on a pledget of picked oakum.

(4,) Ryall's plan of painting on collodion where eczema or excoriations exist.

W. F. Waugh,³ of Chicago, suggests :—

$\mathcal{R}$ Campho-Phenique 5j | Cosmolin 3j
Losophan gr. xx

M. Ft. Ung.—To be applied every night and morning.

REFERENCES.—¹“Journ. de méd. de Paris,” March 14, 1897 ;
²“Treatment,” June 10, 1897 ; ³“Med. World,” Feb. 1897.

PSOAS ABSCESS.

Priestley Leech, M.D., F.R.C.S.

TREATMENT.—Dr. Keefe¹ has done the following operation in three cases with a good result :—

The operation is somewhat severe, but these cases are very often almost hopeless. An incision was made beginning at a sinus opening just above Poupart's ligament, and extending upwards and outwards towards the anterior-superior iliac spine ; thence about one inch above and parallel with the crest of the ilium into the loin and to within an inch of the twelfth rib. A soft rubber catheter was passed into the sinus as a guide. The peritoneum was separated from the iliacus muscle until the catheter, lying in the abscess cavity, could be reached. In the loin the incision was made so deep that the kidney was exposed and the spleen could be palpated. With the finger in the opening the bodies of the vertebræ near the spinal attachment of the diaphragm could be felt. The abscess extended from Poupart's ligament down the thigh, a distance of three inches, and also dipped into the pelvis. The lining of the abscess cavity and the bodies of the vertebræ near the diaphragm were curetted, and the wound washed

out with hot **Bichloride Solution**. Catgut sutures united the several abdominal muscles, and silkworm-gut sutures the integument.

Two openings were allowed to remain, one in the loin and the other in the iliac region. Through these drainage was procured by means of wicks of iodoform gauze.

REFERENCE.—¹ "Annals of Surg.," June, 1897.

PSORIASIS.

T. Colcott Fox, M.B.

Norman Walker¹ discusses the treatment of psoriasis in a clinical lecture. He insists on the frequency of psoriasis in the scalp, and points out the necessity, in order to prevent relapses, of thoroughly dealing with the eruption in this site. The most suitable preliminary treatment here is the daily washing with **Hebra's Spirit of Soft Soap**, cleansing out the lather after use. This may be followed by the use of a weak ammoniated mercury ointment or one containing 10 to 30 grains of **Sulphur** or **Salicylic Acid** to the ounce, according to the state of irritability of the scalp.

On the trunk the treatment will vary according as the spots are numerous or few, acute and hyperæmic, paler and more chronic. In all cases, especially the widespread, the patient should soak daily for ten to thirty minutes in a warm bath, and remove the scales with a nail brush and soft soap.

Chrysarobin Traumaticin or a **Tar Collodion** made with acetone and gun cotton suffices when the spots are few and not inflamed. A lathering with **Ichthyol Tar Soap** before going to bed, and sleeping in a woollen nightdress, succeeds here also, and in more widespread cases.

In more general attacks **Unna's Compound Chrysarobin Ointment** (chrysarobin, 5 parts; salicylic acid, 2 parts; ichthyol, 3 parts; vaselin, 90 parts) is an efficacious and speedy remedy, when well rubbed in, after the bath, twice daily. Painting the spots with pure **Liquor Picis** or with a strong spirituous solution after the nightly bath obviates some of the disagreeable features of chrysarobin treatment.

In acute irritable cases soothing remedies are called for. For internal treatment four remedies are considered, viz., **Arsenic**, which is useful when pushed in a certain class of cases on the decline; **Iodide of Potassium** (5j t.d.s., given at regular intervals by the clock in the absence of kidney affections), is useful, especially in acutely inflamed cases; **Salicylate of Soda**, given in similar cases in 10-grain doses thrice daily; and **Thyroid Gland**, which is undoubtedly of value, but only to be used under strict supervision. Several other remedies have been recommended, amongst them some preparations of the

thyroid gland known as thyroid colloid (Burroughs and Wellcome), iodothylin, etc. It should be stated that the preparations used seem to vary a good deal in quality. Sarubin² tried thyroïdinum siccatum (Merck) in three cases of psoriasis without the slightest effect.

Paschkis and Grosz, of Vienna, cured seven cases out of eight with the desiccated thyroid gland, but the progress was slow and the therapeutic results not convincing. After Baumann had published his first paper on the active principle of the thyroid gland (thyro-iodin, or iodothylin), they used the preparation obtained from Bayer and Co. in three cases. As a rule they began with 0.5 gm., increasing at intervals of two to three days by 0.5 gm. They report that the manifestations of psoriasis were subdued by the use of iodothylin and without the assistance of any other mode of treatment. Neumann,³ H. von Hebra, Ehrmann and others in Vienna have only met with a fair amount of success. Is the action due to the effect on the circulatory system, on the metabolic processes, or to the iodine present? Vamossy and Vas⁴ come to the conclusion as the result of experiments that iodothylin produces no direct acute action as such either on the nervous system or on the vascular system, and that it only develops its specific action through a change in metabolism.

Danlos⁵ showed a man who had been affected with "psoriasis arthro-pathique" from twenty to forty-six years of age. For six or eight years the generalized eruption had resisted all treatment, external and internal. Under the influence of 75 centigrammes of **Cacodylic Acid** daily for three weeks, afterwards reduced to 50 centigrammes on account of some gastric intolerance, the eruption was obviously clearing off from above downwards, as in the other cases of this method of cure recorded.

Boaffe communicated to the French Academy of Sciences the results of treatment by injections of **Brown-Séquard's Testicular Extract** in progressive doses of from 10 to 20 cubic centimètres daily.

The "Brit. Med. Journ." quotes from the "Archives d'elect. méd.," (Jan., 1897,) an equally remarkable treatment by **Static Electricity**. The psoriatic patient was suffering, according to Chatzky, with the cerebro-spinal type of neurasthenia, and the sympathetic system was especially involved. In addition to the cutting down of the amount of food, the prohibition of beef, etc., an electrostatic bath and an electric fan, directed on various parts of the body, were given for twenty minutes, and three sittings a week were given for three weeks. The length of the fanning was then shortened, and an electric douche to the head prescribed. The patient was cured in two and a half months, after twenty-nine sittings.

Luton gives $\frac{3}{4}$ grain of **Extract of Nux Vomica** daily in stubborn cases in which arsenic has been of no service, but at the same time prescribes effervescent baths and the application of a 1 to 1000 ointment of corrosive sublimate and vaselin.

Lastly, in a debate at the congress of German physicians (Sept. 22, 1896), Kunitzky supported the neuropathic theory of the etiology of psoriasis, but Unna and Neisser held that all the facts concerning the neuropathic origin permitted also a parasitic explanation.

REFERENCES.—¹"Quart. Med. Journ.," July, 1897; ²"Vratch.," Nos. 25 and 26; ³"Soc. Vienn. de Derm.," Jan. 13, and Oct. 28, 1897; ⁴"Münch. med. Woch.," June 22, 1897; ⁵"Soc. Franç. de derm. et de syph.," May 20, 1897.

PUBESCENT INSANITY. (See "Insanity.")

PUERPERAL FEVER. (See "Labour.")

PUERPERAL STATE. *Thos. More-Madden, M.D., F.R.C.S., Dublin.*

Angel Money¹ remarks that the custom of weaning the newly-born is too prevalent in our midst. Too few attempts are made to correct a milk on which the infant does not thrive. Everyone knows that human milk, preferably the mother's, is the right food for the newly-born; and yet our actions would appear to belie our assertions. Milk may be too rich, too poor, or radically bad.

Bad milk cannot be rectified; it is the result of some gross fault in the mother: ill-health, bad temper, and uncontrolled emotions. Poor and rich milks can be set right in many cases by simple means; these means are insufficiently employed.

A thorough investigation of the mother and of the milk must be carried out. The quantity and quality of the milk must be ascertained. The percentage of fat and proteid must be determined; these constituents are the only variable factors—variants; the sugar and salts are constants, and do not even influence the specific gravity.

A bad milk contains toxic materials—albumoses and leucomaines. The albumin is plentiful, but of the wrong kind: the percentage of fat is defective; colostrum corpuscles are present, and may be numerous.

A mother desirous and confident of being able to nurse her offspring is one whose milk is most successful, provided she is living in a happy mental environment.

That exercise can diminish the percentage of proteids, and that a moderate amount of beef or mutton can increase the percentage of fats, are facts too seldom acted upon. A poor milk may be enriched by improving the maternal dietary, giving more meat and more milk, diminishing the exercise taken by the mother, shortening the interval

of nursing, and diminishing the amount of liquids imbibed. A rich milk may be diluted by lengthening the interval of nursing, decreasing the meat eaten by the mother, increasing the exercise, and augmenting the quantity of fluids taken. Drinking rain or distilled water, Helidon or Vichy water, midway between the nursings is an excellent practice.

Though colostrum corpuscles are considered natural to the milk of the first two weeks their absence would be better for the child : their presence is a sign of defective formation of milk.

It is unjustifiable to diminish the water in a poor milk by maternal purgation ; sudden purgation may stop the milk altogether, and may make so unfavourable an impression on the breast that what milk is secreted is bad—contains toxic substances.

The breast pump is insufficiently used as a means of improving the function of lactation. The breast pump should take the place of the baby whilst attempts are being made to improve the quality and quantity of the milk. The more perfectly formed a milk is the more caseinogen and the less albumin it contains. However much the percentage of caseinogen, the clotting set up by gastric digestion is never dense like that found after the ingestion of cow's milk.

The diet and regimen of the nursing mother are most important, and definite rules should be set forth. It is a mistake to suppose that stout or porter improves the milk ; it is very rare indeed that a glass of stout does enhance the nutritive value of milk. Another error is the belief that beef-tea and chicken broth are good for the nursing mother. Excitement, fatigue, and over-feeding must be carefully avoided. Highly spiced and rich or stimulating articles of diet should be eschewed. The bowels should be kept regular by proper dieting and massage or exercise, rather than by the use of laxatives. It is highly desirable that the mother and the child should get an uninterrupted sleep of six hours during the night. (See also "Lactation.")

Dr. Richard Drews² states that **Somatose** exercises a specific action upon the mammary glands of nursing women in that it produces an abundant secretion of milk and rapidly removes the disorders observed during lactation. It is, therefore, recommended when the quantity is insufficient, and when at the commencement of lactation the flow seems about to cease, in order that the dangers of artificial alimentation may be avoided. It goes without saying that the integrity of the gland is perfect and there are present no diseases which prevent nursing. The dose is 3 or 4 teaspoonfuls daily taken in milk, hot bouillon, or cocoa. It has hardly any taste, and therefore is easily administered, and its use continued for a long time

REFERENCES.—¹"Australasian Med. Gaz.," Jan. 20, 1897; ²"Rev. de thérap. méd.-chir.," 1896, No. 13, p. 392, and "Amer. Journ. of Med. Sci.," Feb. 1897.

PYELITIS.

Prof. R. Saundby, M.D., F.R.C.P.

Dr. A. Robin¹ uses the following when pain is present :—

℞ Venice Turpentine	℥iss	Extract of Opium	gr. v
Powdered Camphor	℥iss	Extract of Aconite Root	gr. iij

Mix and make into twenty pills. Sig—One pill to be taken every eight hours, and at the same time a small glassful of infusion of uva ursi, slightly sweetened.

REFERENCE.—¹"Le Progrès méd."

PYLORUS (Stenosis of). (See "Stomach.")**QUINSY (or Peritonsillar Abscess).**

R. Lake, F.R.C.S.

The route of infection is through the tonsil tissue, but the collection of pus is in the peritonsillar lymph space. The abscess should be evacuated as early as possible by means of a horizontal incision above the anterior faucial pillar and about the level of the base of the uvula (see *Fig. 64*). H. J. Cantler recommends **Lactophenin**, 10 grains, every three hours, which in early cases may abort the disease. To relieve the distressing symptoms caused by the accumulation of thick ropy mucus about the fauces, nothing equals a gargle of a hot saturated solution of **Sodæ Bicarbonas**.

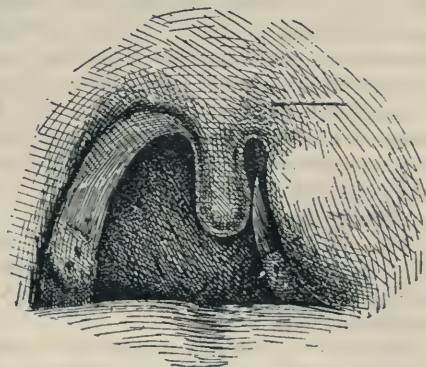


Fig. 64.—Incision in Quinsy or Peritonsillar Abscess.

H. Clutton¹ reported a case in which hæmorrhage occurred from an abscess cavity above the right tonsil; after a few days the abscess cavity was laid open and the cavity plugged with gauze, as the bleeding was of a character which suggested its coming from the jugular. Severe hæmorrhage recurred during the night, and the day following the common, internal and external carotids were ligated. This case is almost a parallel to the historical one which laid the foundation to the pious terror felt by many in incising a quinsy, whilst it is doubtless due to timid procrastination that the arterial wall is sufficiently weakened to rupture at the moment external pressure is reduced. Heddaeus²

reports another case well exemplifying the danger attending neglect of the surgical axiom of promptly evacuating pus. In this instance death occurred from general infection.

REFERENCES.—¹"Brit. Med. Journ.," May 29, 1897; ²"Münch. med. Woch.," May 4, 1897.

RASHES (Accidental).

T. Colcott Fox, M.B.

Rashes occurring in the course of the Exanthemata.—The following is a convenient epitome by Finch Noyes¹ of a paper by Meredith Richards, which is of much interest and importance to practitioners.

The writer refers briefly to certain of the general rashes which are sufficiently common to occasionally give rise to difficulty in diagnosis, while they are not sufficiently common to be universally known. No attempt has been made to describe every variety of skin lesion observed in the course of the exanthemata, such, for instance, as the boils of smallpox or the eczema of scarlatina patients.

Smallpox.—The following are the pre-eruptive or prodromal rashes of variola in order of frequency: (1,) A general scarlatiniform rash, with or without petechiæ; (2,) A morbilliform erythema, general in distribution, but rarely found on the face; (3,) A petechial rash limited to the groins and axillæ; (4,) A general purpura; (5,) Urticarial-like papular erythema, general in distribution. The post-eruptive rashes include (1,) A scarlatiniform erythema; (2,) A further development of the smallpox pustule, due to a mixed infection; (3,) Flaccid bulbous formations occurring in the healthy intra-pustular epidermis.

Varicella.—A diffuse scarlatiniform rash occasionally develops immediately before the specific eruption. The post-eruptive complications are a gyrate form of impetigo contagiosa and varicella (dermatitis) gangrænosa.

Enteric.—In addition to purpuric spots, taches bleuâtres, and sudamina, the following are observed: (1,) Simple hyperæmia; (2,) Miliary eruptions; (3,) Erythematous rashes; (4,) Urticaria. The erythematous rashes give rise to most difficulty. They may be either scarlatiniform or morbilliform, and occur either in the pre-eruptive or the post-eruptive stage. The copious desquamation which frequently follows the miliary rash, which is very common, occasionally causes an unnecessary suspicion of scarlatina.

Scarlet Fever.—Copious miliaria and urticaria may accompany the onset of the eruption and modify the aspect of the case in a remarkable degree. The most common accidental rash occurs late, in the disease, about the third week, and consists of a macular and papular erythema, somewhat like measles, when fully developed. It may lead

to error in diagnosis, and from a prognostic point of view is important, the death rate being very high in these cases.

Measles.—The most common are of the scarlatiniform type, sometimes diffuse and sometimes of the blotchy variety. The former is usually more transient and more diffuse than the eruption of scarlatina.

It may be useful to mention also that great difficulty and confusion may be occasioned in *diphtheria* by the occurrence of scarlatiniform, or in our experience, more commonly, morbilliform rashes. We have also seen well marked erythema multiforme and purpura, especially in the later stages.

The scarlatiniform rashes are of considerable interest in relation to scarlatina, and the diagnosis is often surrounded with difficulties. Accumulated observations show that such rashes occur in connection with all kinds of "blood poisoning," *e.g.*, the absorption of drugs, such as mercury and belladonna, the retention of effete material in Bright's disease, and the contamination of the blood by various organisms or their products, as staphylococci and streptococci. It is supposed that other forms of poisoning, such as auto-intoxication from the intestine, may give rise to similar rashes. Anyone who has had experience of the working of a children's hospital in past years must realize the extreme difficulty sometimes occasioned in making a confident diagnosis in cases of so-called surgical or medical scarlatina.

There is another class of case, no doubt rare, which has been described as *relapsing desquamative scarlatiniform erythema*. Frank,² of Milwaukee, describes such a case in a lad who had suffered from scarlatina some years previously. There were four recurrences at intervals of a scarlatiniform rash accompanying constitutional disturbance, and each time curiously there was a relapse. In a case described by Hallopeau and Besnier there were twenty recurrences. If the patient has not had scarlatina the diagnosis may be very difficult in the first attack. Such cases are of obvious interest in connection with the "return" case of scarlet fever about which so much has been written lately.

REFERENCES—¹"Austral. Med. Gaz."; "Quart. Med. Journ.," Oct., 1896; p. 31; ²"Journ. Cut. and Gen.-Urin. Dis.," March, 1897, p. 116.

RECTUM (Cancer of).

Herbert W. Allingham, F.R.C.S. Eng.

There has been ample discussion of Kraske's method of sacral excision and of its modifications, and also of kindred operations.

Kraske¹ himself has furnished statistics of his cases with regard to mortality, after-conditions and recurrences. Out of his first twenty-

nine cases, ten; and out of his later fifty-one cases, five, died, only seven of the fifteen fatalities being directly attributable to the operation. A systematic review of this operation and its modifications was included in Dr. E. H. Taylor's presidential address to the Biological association of Dublin University.²

Mr. C. B. Ball, of Dublin, in the section of surgery at the annual meeting of the British Medical Association, read a paper on Trans-sacral excision of the rectum.³ He held that the perineal method should be discarded in favour of the sacral, in all cases of cancer except those in which the anus alone was involved, and he adopted the transverse division of the sacrum recommended by Bardenheuer. He proposed to abandon his former plan of making a sacral anus, except in cases when the anus was so involved that the surrounding musculature could not be retained in a useful condition; and in the rare cases when the upper segment could not be brought down sufficiently for a resection or for a normally situated artificial anus. He did not greatly favour a resection with end-to-end junction. What he considered best was Moulonguet's method of dissecting out the lower portion to the upper surface of the pelvic diaphragm, and the entire mucous membrane down to its junction with the scaly epithelium of the anal canal. The entire sphincteric apparatus was preserved from injury, the upper end was freed, brought out at the anus without tension, and sutured there; in this way an artificial anus being formed at the normal position and provided with efficient sphincteric control. To preserve the mass of vessels in the loose areolar tissue in the hollow of the sacrum that supply the rectum it was desirable, posteriorly, to keep as far as possible from the muscular tissue of the bowel. The danger of necrosis of the intestine was the drawback to the operation, but it might be obviated.

Mr. Frederic Eve⁴ has published a successful case of Kraske's operation, and Mr. Jackson Clarke⁵ has excised the upper half of the rectum by this method. The latter holds that the main drawback is the tendency to the formation of a fistula, there not being usually time to perform a linear proctotomy and to stitch the ends of the bowel by Maunsell's method.

In his article on the fourteen cases in which he had removed high-lying cancer by Kraske's method, Mr. Swinford Edwards⁶ showed himself to be one more of the supporters of excision as against colotomy for cancer high up in the rectum. He was personally of opinion that the position of the growth formed, *per se*, no bar to its removal.

Another of the advocates of the Kraske method is Dr. W. W.

Keen,⁷ of Philadelphia. From his account of his twenty-five cases of cancer of the rectum it may be gathered that he extirpated the growth in fifteen cases (in nine by Kraske's or Kocher's method), twelve recovering, and three dying from shock, uræmia, and sloughing of the bowel respectively. From his own calculations there were $33\frac{1}{2}$ per cent. of definite cures (four year limit) in the twelve operative recoveries.

M. Depage⁸ likewise practises resection. Even for cancer situated high up he was accustomed to draw down the superior segment of the anus after having invaginated it into the lower segment, being able to avoid gangrene of the intestines when the superior hæmorrhoidal artery had been preserved.

For partial resection of the rectum in women Sternberg⁹ advocated an incision of the anterior portion of the perineal raphé and of the median line of the recto-vaginal septum. By this procedure, together with division of the sphincter, isolation and resection of the diseased rectum and exposure and removal of the affected glands were facilitated. By this method the gut was even more accessible than by the sacral method. Gersuny had employed this in twelve cases of cancer and in two of non-malignant stricture.

Dr. Henry Byford¹⁰ also attempted vaginal section, utilizing the vagina to replace the lost rectal tissue. He separated the vagina and the upper rectum from the connective tissue and anus. His method was not yet perfected, though less dangerous than similar methods tried by other American surgeons.

REFERENCES.—¹"Brit. Med. Journ.," Oct. 16, 1897; ²"Annals of Surg.," April, 1897; ³"Brit. Med. Journ.," Oct. 16, 1897; ⁴"Lancet," March 13, 1897; ⁵Ibid., Jan. 18, 1897; ⁶"Brit. Med. Journ.," May 15, 1897; ⁷"Therap. Gaz.," May 15, 1897; ⁸"Amer. Journ. of Med. Sci.," March, 1897; ⁹"Brit. Med. Journ.," May 8, 1897; ¹⁰"Annals of Surg.," Nov., 1896.

RECTUM (Hæmorrhage from). *Herbert W. Allingham, F.R.C.S., Eng.*

In an able paper by Dr. Manley¹ on Gastric, Intestinal and Rectal Hæmorrhage, there is a succinct account as regards both diagnosis and treatment of hæmorrhage from the rectum. It may be symptomatic of constitutional or organic disease as plethora or hepatic congestion. Arising from a lesion in some part of the digestive tube, anywhere from the flexure to the cardiac end of the stomach, blood may escape, changed or unchanged, through the rectum.

These local lesions, arranged in their order of frequency as a source of hæmorrhage in the ano-rectal outlet of the intestine, are (a,) Hæmorrhoids; (b,) Simple or tuberculous ulceration; (c,) Malignant

disease. Dr. Manley shows that such hæmorrhage from ulceration of any part of the digestive tube above the rectum is at present amenable only to medical, and not to direct surgical, treatment.

REFERENCE.—'Quoted in the "Clin. Journ.," Oct. 28, 1896.

RECTUM (Prolapse of).

Herbert W. Allingham, F.R.C.S. Eng.

Dr. Buzzard¹ in his account of surgical cases at Dr. Charles Kelsey's clinic, describes the latter's procedure in two severe and old-standing cases of procidentia. The abdomen was opened at about the site of the incision for left inguinal colotomy; the sigmoid flexure was drawn into the wound, and sutured to the abdominal wall, and the abdominal incision was closed. In one of the cases a further operation was necessary, namely, resection of the whole procidentia by means of circular incisions both anteriorly and posteriorly. The length of rectum removed was five inches.

Schwartz,² after performing linear cauterization, made an incision from the anus to the coccyx, and excised the latter. By sutures he narrowed the rectum from side to side and from above down, cut away the skin and peri-anal tissues both posteriorly and anteriorly to the anus, and re-united them, as in perineorrhaphy.

In the case of a man with a procidentia, 15 centimètres long, Dr. Nélaton³ resected the rectum and the sigmoid flexure in order to fix the remaining portion to the edge of the anus, and after that resected 25 centimètres of the intestine. In children he resected the whole of the procidentia.

For a child, on whom other methods had failed, Dr. Platt⁴ formed a purse-skin suture at the juncture of the skin and mucous membrane of the anus, and kept the suture there for three weeks. As the bowel was kept in place long enough to contract adhesions, the procidentia did not return.

REFERENCES.—¹"New York Med. Journ.," Nov. 7, 1896; ²"Practitioner," March 7, 1897; ³"Med. Rec.," Feb. 8, 1897; ⁴"Therap. Gaz.," Dec. 5, 1896.

RESPIRATION.

F. de Havilland Hall, M.D., F.R.C.P.

Unverricht¹ draws attention to the harmful effects of atropin upon the respiration. He observes that the results of treatment by antagonists, such as morphin poisoning by atropin, have been only moderate. It is incorrect to assume that the respiration is improved because it becomes more rapid. The author's investigations have shown that there is no antagonism between morphin and atropin as far as the respiration is concerned.

Atropine can produce Cheyne-Stokes breathing, and an agent which can call forth this phenomenon cannot be looked upon as a respiratory stimulant.

REFERENCE.—“*Therap. Gaz.*,” Oct. 15, 1896.

RESPIRATORY GYMNASTICS. *F. de Havilland Hall, M.D.*

One of the great advances in the treatment of chronic pulmonary affections is the recognition of the importance of thorough ventilation of the lungs. Walking is hardly sufficient to fill the lung, but all exercises which bring the legs into violent action are especially good for the respiration. In order, however, to train and develop the respiratory muscles and lungs certain direct or local respiratory exercises have been devised.

Otis^{*} has written a very practical paper on this subject. After stating that all exercise is interdicted to those suffering from acute inflammation, the febrile state, or serious hæmorrhage, he gives the following directions: Standing erect in a well ventilated room, or wherever there is pure air, with the hands on the hips, and taking long, deep inspirations, and slow expirations, beginning at the bottom of the chest and filling up, so to speak. This, alone, done several times a day, will often materially increase the lung capacity, as the writer has frequently verified. “Numerous observations,” says Lagrange, “prove that voluntarily taking a certain number of deep breaths every day is sufficient to produce in a short time an increase in the circumference of the chest, which may amount to 2 or 3 centimètres.”

In these breathing exercises the rhythm can be varied according to the following schedule: (1,) Slow and long inspiration and expiration; (2,) Inspiration and expiration long and quick; (3,) Slow and long inspiration, and long and quick expiration; (4,) Long and quick inspiration, and slow and long expiration; (5,) Short inspiration and long expiration; (6,) Long inspiration and short expiration; (7,) Short inspiration and expiration; (8,) Inspiration by two or three stages or jerks, and expiration long; (9,) Inspiration long and expiration by stages or jerks; (10,) Inspiration and expiration by stages or jerks. In all these exercises one should breathe through the nose only.

Then there are the various arm movements with their modifications, in connection with the deep breathing: Slowly raising the arms to a horizontal position and then over the head until the hands meet, slowly and deeply inspiring while performing the movements, and expiring while lowering the arms; thus the supplementary respiratory muscles of the chest and shoulders are brought into action. Raising the arms and then carrying them back and down, describing a move-

ment of circumduction. Standing erect and straightening up, and finally rising upon one's toes, deeply inspiring during this movement. Extending the arms in a horizontal position, and carrying one of the legs back so as to offer a large base of support to the body. Lying on the back horizontally upon the floor or a table, and raising the arms backward and over the head while inspiring; if lying upon a narrow table, the arms can describe a circle about the head. The exercises with wands or bar-bells, which demand rather more exertion perhaps than the free-hand movements.

(The physical treatment of phthisis was described and illustrated by Dr. Percy Wilde, "Medical Annual," p. 391, 1892.—ED.)

REFERENCE.—¹"Therap. Gaz.," Oct. 15, 1896.

RETINA (Detachment of). *Wm. Oliver Moore, M.D., New York.*

Wood¹ reports six cases that were treated sufficiently long to show the effect of treatment.

In two **Scleral Punctures** were employed, in one **Iridectomy**, in the three others, continued **Rest in Bed** with **Pilocarpin Injections**. Only in one case treated by puncture and pilocarpin was there a field expanded, and the central vision improved.

At least 10 per cent. of the reported cures were accomplished without treatment. He does not approve of Scholer's method.

Wolfe² first determines the side to which the effused serum gravitates, and then removing it by a linear sclerotomy, the eyeball being, meanwhile, rotated in such manner as to secure the entire evacuation of the effusion. The improvement is immediate.

REFERENCES.—¹"Therap. Gaz.," Jan. 15, 1897: ²"Med. Press and Circ.," April 21, 1897.

RHEUMATISM (Acute).

[*Editorial.*]

The reports of the past year show a growing disbelief in the too general use of salicylates in acute rheumatism, and it must be remembered that the experience of following the use of salicylates applies to all drugs of the same chemical group, which depend for their repute upon antipyretic and analgesic effects. Cases recording such results as proving the efficacy of drugs are unworthy of attention, as relapses, and these of a more serious character than the original disorder, are likely to occur.

Jaccoud¹ holds that the beneficial action of **Salicylate of Soda** in acute rheumatism is confined to the joint affection, and has no effect on the visceral complications. He never prescribes it where there is endocarditis; in pulmonary complications it increases the dyspnoea, promotes the appearance of albuminuria, and when there is headache,

delirium, or other cerebral phenomena, might entail the patient's death. In the more common form of rheumatism in which the visceral complications are of moderate intensity and do not show till the second week, it is not unusual to meet with a sort of alternation in the severity of the arthritis and the cardiac or pleuro-pneumonic affection. Salicylate of soda, he believes, in relieving one aggravates the other, and to a proportionate extent. He quotes statistics of Donald Hood, S. Coupland, G. Smith, and Bodt, to show that visceral complications are more common in cases treated by salicylate of soda than in others, and concludes it ought never to be given when such complications exist.

Dr. H. B. Carpenter² strongly advises *against the use of salol in acute rheumatism*, remembering that it contains about 36 per cent. of carbolic acid, and in order to produce the physiologic effect of salicylic acid one runs the danger of carbolic-acid poisoning. In a case recently in which salol was given in conjunction with phenacetin (2½ grains of each) not only was the amount of urine passed reduced, but the urine became bloody.

Malakin was brought forward as a remedy for rheumatism in 1893. Recently Korotkoff and Oussoff³ published reports of three cases in which they employed this drug. The first case was one of articular rheumatism without complication; in the second the trouble was subacute and there were nervous phenomena; and in the third the attack was acute but very grave and associated with endocarditis. In all three cases the malakin produced a good effect in from three to four days; the temperature returned to normal without notable oscillation, and the pain ceased. The dose is from 45 to 60 grains a day, and they did not discover any of the disagreeable symptoms which follow the use of salicylic acid.

Dr. Eshner⁴ considers the following useful in cases of acute and subacute *rheumatism* in which there is considerable involvement of the muscles and also great pain :—

℞ Phenazon	ʒij	Ammonium Bromid	ʒiv
Sodium Salicylate	ʒiij	Cinnamon Water	ʒiij
Mix.	Dose.—A teaspoonful every three or four hours.		

Dr. Max Olney⁵ of Halle, reports the results obtained in a series of experiments with **Phenocoll Hydrochloride**. The remedy was used in sixteen cases in doses of 15 grains three times a day, and was prompt in its action. In three cases it failed; in all the others, some of which had been treated without success with sodium salicylate, it acted promptly. In cases that were not of long standing the pain diminished after 8 scruples had been taken, and complete recovery

after 6 drachms. The average time of treatment was thirty days. In recurring cases, on an average 6 drachms were required and the treatment lasted for thirty-three days.

The influence of the remedy on the temperature is reported as quite variable. The temperature becomes normal as soon as the affection of the joints has disappeared. Considerable perspiration was observed with weak patients, but no other by-effects, such as cyanosis, collapse, etc., were noticed.

Dr. H. Barré⁶ reports a single instance in which in spite of repeated cold baths and sodium salicylate the temperature rapidly rose. He injected artificial serum by the following method, which he calls disin-toxication of the blood: First, the needle through which the artificial serum is to be passed is introduced into the right median cephalic vein. As the transfusion is beginning to be made, another needle, through which the blood is to be withdrawn, is introduced into the corresponding vein of the other arm. Improvement showed itself when about six ounces of blood, which had been replaced by the artificial serum, had been withdrawn. Twenty ounces in all were withdrawn. The patient recovered. The essential peculiarity of the process consists in the simultaneous drawing of blood and introduction of artificial serum in quantity not greater than that of the blood withdrawn.

At a meeting of the Société Médicale,⁷ M. Lemoine said he treated nine cases of acute rheumatism by painting the inflamed joints with **Salicylate of Methyl**, as recommended by Sinossier and Lamsois, with uniform success. The **Essence of Wintergreen** applied to the cutaneous surface, acted in the same way as salicylate of soda, taken internally, but seemed to more rapidly diminish the suffering. At the dose of from 1 to 2 drachms no vertigo nor noises in the ears were experienced. The drug was eliminated by the urine in the form of salicylic acid, and equal to a tenth of the quantity applied. His method was to sprinkle the desired amount on a linen compress, and to cover it with a sheet of gutta-percha, the whole maintained in position by a bandage. When the application could not be made directly *loco dolenti*, he placed the compress as near as possible to the root of the limb. The good results obtained seemed to be chiefly due to the cutaneous absorption through the general circulation.

M. Sireday considered that the essence of wintergreen had more effect on subacute and chronic rheumatism than salicylate of soda. The drug gave him also satisfaction in the treatment of the fulgurating pains of locomotor ataxy, and of Pott's disease.

The following has also been used as a local application to rheumatic joints⁸ :—

R Salicylic Acid	Lanolin	āā ʒiiss
Oil of Turpentine	Lard	ʒiij

REFERENCES.—¹"Sem. méd.," Oct. 28, 1896; ²"Phil. Polyclin.," April 24, 1897; ³"La Méd. mod.," May 13, 1897; ⁴"Phil. Polyclin.," Jan. 1897; ⁵"Therap. Monats.," Dec. 1896; ⁶"Med. Press and Circ.," No. 10, 1896; ⁷*Ibid.*, May 19, 1897; ⁸"Journ. des Prat.," Oct. 1897.

RHEUMATISM (Chronic).

[*Editorial.*

Cassin¹ refers to a case of chronic rheumatism treated by injections of **Chéron's Serum**. The patient was a man, aged forty-nine, who had been suffering from chronic rheumatism since he was thirty-seven, all the joints being successively affected, and where no result was obtained by any therapeutic method, arsenic, salicin, etc., proving useless. Chéron's serum was then tried, 5 to 10 c.cm. being injected daily either into the deep muscles of the back or the tissues round the affected joint, according to the part affected. The result was surprising, the patient being able to resume the movement of the joints. It would seem that the rheumatic condition continued, but its effects were kept in abeyance by the regular use of the injection.

REFERENCE.—¹"Journ. de méd.," Aug. 10, 1896.

RHEUMATISM (Gonorrhœal).

[*Editorial.*

Dr. A. Dezanneau¹ says that the habitual failure of internal medication in the treatment of gonorrhœal rheumatism is well known. The salicylate of sodium has no action; colchicum, veratrin, and alkalies in larger doses either do not act or act very feebly. Salol exerts a certain influence but irritates the kidneys. The iodides are liable to set up a urethritis, according to Balzer; moreover they produce gastric troubles and anæmia in certain patients. As to local treatment Dr. Dezanneau assures us that the new method of **Terebinthine Baths** give marked success. The technique is as follows: The terebinthine mixture employed by M. Balzer, who is the originator of this method, is :—

R Watery Emulsion of Green Soap,	Spirits of Turpentine āā 100 grammes
Shake the Mixture before using.	

The terebinthine baths are employed in two forms—local and general. The latter is indicated in certain cases of polyarthrits, when articulations are very far apart and when the position of the diseased joint makes the local bath inconvenient, as the shoulders, the hips, or the sterno-clavicular articulation. For this general bath one uses from

150 to 500 or even 800 grammes, according to the susceptibility of the patient, as these baths produce sometimes a marked smarting. The bath should be used as warm as possible. The amount of the mixture and the temperature should be increased progressively as the patient becomes accustomed to them. The duration of the bath is from ten to twenty minutes. Sometimes the general bath causes a smarting of the skin and genital organs, which can be obviated by the application of vaselin. The local baths are employed when the diseased parts are near together and when the situation of the articulation favours it, as the knee, the elbow, etc. Local baths are better, because the strength of the solution and the temperature of the bath can be increased. Certain precautions should be observed in the giving of these baths; for example, one should not commence this treatment until after the disappearance of the acute phenomena, and the susceptibility of the patient should be tested before increasing progressively the quantity used. The turpentine bath has at the same time a revulsant and an absorbent action. The beneficial effects of the heat should not be overlooked. Surgical interference is not indicated except in purulent arthritis.

Dr. König² (Berlin) says: In any acute inflammation of the joints it is always advisable to examine the urethra. In 90 per cent. of the cases one finds a urethritis. It is, therefore, justifiable to conclude that the most frequent form of arthritis is the gonorrhœal and not the tubercular. Many of the cases of puerperal arthritis as well as those of chronic articular rheumatism in women are gonorrhœal. The disease affects both sexes in about equal numbers. In women the wrist, in men the knee-joint are most frequently affected. Gonococci have been frequently found in the joints. In many cases staphylococci, streptococci, and pneumococci are found. The cases may be divided into four groups: The first, one in which effusion alone occurs; a second, with fibrin formation and capsular thickening; a third, the latter condition associated with para-articular phlegmons with involvement of the tendons and ligaments; lastly, one in which ankylosis occurs very early, much fibrin, infiltration of ligaments, etc. There is the greatest tendency for the joint ends of bones to grow together. The treatment of gonorrhœal arthritis should be puncture of the joint and injection of **Carbolic Acid** solution in cases of simple effusion. In those in which there is para-articular infection, it is necessary to open the joint and wash it out. In cases of threatening ankylosis, mobilization. To relieve the pains the application of **Plaster Casts** has been found efficacious. But this tends to produce ankylosis, and hence the administration of

45 grains daily of **Potassium Iodide**, and injection of **Iodoform Emulsion** should first be tried.

REFERENCES.—¹"Le Scalpel," Oct. 4, 1896; ²"Ann. of Surg.," March, 1897.

RHEUMATOID ARTHRITIS.

[*Editorial.*]

When we remember that a disturbance of the vaso-motor system with a quick high tension pulse is one of the most characteristic symptoms of rheumatoid arthritis, the following case is of great interest:—

A patient having this disease and also exophthalmic goître, under the care of Dr. S. Solis Cohen,¹ was given 5 grains of extract of **Thymus Gland** three times a day, for nearly twelve months. At the end of this term there was still moderate exophthalmus, and the thyroid was still enlarged, though diminished from its previous size. The pain in the joints, however, which was the most distressing symptom, had entirely disappeared; and while no demonstrable change had taken place in the articular lesions, the fingers are much more mobile, and there has been no extension of the morbid process. The tremor of the hands, the general nervousness and the tachycardia have all disappeared. Further experiments with thymus gland would be interesting.

Goldthwait² reports a series of cases which for convenience' sake he considers under two types—rheumatoid arthritis and osteo-arthritis; to the differentiation of which he attaches much importance from a therapeutic point of view. Rheumatoid arthritis is said to be much more acute than osteo-arthritis; it occurs in middle and advanced life and in early life as well. During the acute stage the joints present a spindle-shaped swelling, which finally subsides, leaving the joint much atrophied and usually ankylosed. In the treatment of cases belonging to this category the joints should be manipulated after all acute symptoms have disappeared. The character of the manipulations is of much importance. Osteo-arthritis is a much more chronic condition, occurring only in middle life or old age, and is characterized by a proliferation of the articular cartilage, with the formation of nodes about the joints. In cases of this kind manipulation should not be practised, as any injury or undue violence is likely to stimulate a more rapid development of the cartilage. It is this tendency that explains the impairment of function that so often results after comparatively simple injuries to a joint. Under such circumstances protection and immobilization are of importance.

Dr. J. R. Philpots³ claims to have had good results from the use of **Methylene Blue**. He writes as follows: In several very obstinate

cases which have lately been under my care, I have administered this drug with the greatest benefit, each case showing marked improvement soon after commencement of treatment. Not only does the arthritic process appear to be altogether arrested, but the drug has a favourable influence on the general condition, improving nutrition and leading to increase of body-weight. A 2-grain tabloid is the most convenient form of administration, one to be taken twice daily after food. The patient should be warned that one of the first effects of the drug is to colour the urine blue.

Pyoktanin (methylene violet), on the other hand, has very little effect on the urine, is not well borne, and has not given good results.

Although Dr. Philpots' experience has been limited, he ventures to think that the success has been sufficient to warrant his drawing attention to this treatment, and he hopes that others with more opportunities will give the method a trial.

REFERENCES.—¹“Phil. Polyclin.,” Nov. 1896; ²“Boston Med. and Surg. Journ.,” Jan. 28, 1897; ³“Brit. Med. Journ.,” March 27, 1897.

RHINITIS (Acute). (See “Coryza.”)

RHINITIS (Atrophic). (See “Ozæna.”)

RHINITIS (Hypertrophic). (See “Nose.”)

RINGWORM.

T Colcott Fox, M.B.

One practical result of the patient investigations of Sabouraud is to emphasize the fact that the hair of the scalp is invaded nearly to the bulb, and that remedies, *however strongly parasiticide, cannot and do not penetrate to this depth.* Hence the impossibility of curing ordinary ringworm of the scalp *by simple parasiticide treatment*, except after months of rubbing. The best treatment is to set up an inflammation in patch after patch, or section after section, deep-seated enough to cause the hairs to fall, but to carefully avoid suppuration—deep-seated, leaving a scar. In discussing the value of remedies it is absolutely necessary to know the age of the infection and the extent to which the hairs are involved. Secondly we must distinguish between the purely parasiticide effects of remedies and their irritative effects. We are in full accord with Sabouraud concerning the mechanical difficulty in making remedies penetrate to the bulbs and bottom of the follicles. Prolonged rubbing over weeks and months sets up inflammation and causes the hair to fall with the fungus, and no doubt gradually introduces the remedy into empty follicles.

Allen,¹ of New York, and Freeman,² of Reading, make many excellent practical remarks, but discuss the subject very much on the old lines of simple parasiticide treatment.

Strong Solution of Salt has again been extolled as a rapid and never-failing specific. An addition of real value to our Pharmacopœia is, we believe, **Formaldehyde** or **Formalin**, which is so largely used to kill cultures of ringworms. Its parasiticide and disinfecting qualities are now well known. Alfred Salter³ says forty cases were treated, the majority with Schering's formalin in full 40 per cent. strength, and some with formaldehyde of English manufacture. The fluid was vigorously rubbed in with a large brush or mop for ten minutes every other day or every day on four occasions. *Of the forty cases only five required repainting from non-eradication of the disease.* The extent of the disease varied from a small, strictly localized patch to areas that were practically co-extensive with the scalp. Colman, at the Great Ormond street Children's hospital, confirms these observations. There is no question about the parasiticide qualities of this remedy, but in our opinion it cures chiefly by its inflammatory effects. We have used it on a large scale and can speak very highly of it, though others fail to see its merits. It is very painful, like glacial acetic acid. It inflames the areas to which it is applied, and if applied extensively may cause considerable irritation of the face and lymphatic glands. It therefore should be applied area by area, and often in diluted solutions.

Sheffield⁴ describes his experiences in an epidemic (nearly four hundred cases) at an orphan asylum. After trying carbolic acid, bichloride of mercury, chrysarobin, etc., for four months without controlling the disease, he finally *cured all the cases in about four weeks* by the following treatment:—

R̄	Acid Carbol.		Olei Ricini	ʒijss
	Olei Petrolei Crudi	āā ʒij	Olei Rusci (German)	q.s. ad Oj
	Tinc. Iodini		ʒijss	

M. Sig.—Apply over entire scalp once a day for four successive days; wash off thoroughly with green soap on the sixth day; then clip the hair close to the scalp and wash again as before.

Repeat this course of treatment regularly for three successive weeks.

To relieve any eczematous inflammation, and as a precautionary measure, he then rubs in thoroughly, once daily:—

R̄	Resorcin		Alcoholis	ʒijv
	Acid. Salicylici	āā ʒiv	Olei Ricini	q.s. ad Oj

Sheffield also eulogizes **Glacial Acetic Acid** in acute sporadic cases of ringworm of the scalp. He touches the patches, by means of a swab, once every third day, making in all three applications. This remedy has been thoroughly tested in France and found wanting. If

it cures it is in recent cases and by its inflammatory effects, as in Toulmin's well known application.

REFERENCES.—Sabouraud, "Ann. de Derm. et de Syph.," 1896; Colcott Fox and Blaxall, "Brit. Journ. Derm.," 1896, and "Path. Soc.," London, 1897; Waelsch, "Archiv. f. Derm. u. Syph.," Bd. xxxv. and xxxvii., Nov., 1896; Krösing, *Ibid.*, Bd. xxxv.; Unna, "Monats. f. prakt. Derm.," Bd. xxiv.; Pelgatti, "Giorn. Ital. d. Mal.-Ven. ed. pelle," 1896; Cantrell, "Journ. Cut. and Gen.-Urin. Dis.," March, 1896; Demazière, "Thèse de Bordeaux," 1896; Carruccio, "Clin. Derm. d. R. Univers ital. di Roma.," 1897; "Ped.," Aug. 15, 1896; ²"Lancet," Oct. 31, 1896; ³"Brit. Med. Journ.," Sept. 12, 1896, p. 650; ⁴"Amer. Med. Surg. Bull.," Sept. 5, 1896.

ROENTGEN RAYS (in Medicine).

F. de Havilland Hall, M.D., F.R.C.P.

When the new photography was first introduced its application was almost entirely limited to surgical cases, but recent improvements have enabled skiagraphs to be taken of the internal organs, and Sir George Stokes¹ is sanguine enough to believe that eventually we shall be able to see the whole body.

So far, however, though the results have been exceedingly interesting, no marked assistance has been rendered in diagnosis. Take for example the heart. It is quite true, as Mr. Sydney Rowland² has pointed out, that by using a sufficiently large plate a skiagraph of the heart may be obtained; but the skiagraph consists of nothing else but a shadow of the outline of the heart. A more satisfactory result is to be obtained by the ordinary methods of palpation and percussion.

The attempts by Dr. MacIntyre³ to apply the process to the diagnosis of diseases of the soft parts have resulted in the recognition of the changes in the position and shape of the heart and the other large and solid viscera.

Ch. Bouchard⁴ found that if a patient were placed between a Crookes's tube and a fluorescent screen the side of the thorax occupied by an effusion presented a darker tint than the healthy one. If the effusion did not fill the whole cavity the apex was clearer, and the upper border of the darker part corresponded to the upper limit of dulness on percussion. The mediastinum was seen as a shadow (in the case of right pleural effusions) to the left of the sternum, the apex being above* and the base continuous with the opacity due to the heart. He was first led to use the same method in phthisis by observing in one case of pleurisy that the apex remained dark after a clearer zone had appeared in the middle of the thorax. Percussion and auscultation showed that there was consolidation at this apex. In all phthisical patients subsequently examined the shadows of the pulmonary lesions

were seen. As a rule they corresponded to what one would have expected from the physical signs. In two cases clear patches on a dark ground marked the position of cavities already diagnosed by their physical signs. In two others, however, where cavities were diagnosed nothing abnormal was seen by the X-rays. In one case where general symptoms pointed to commencing phthisis, but abnormal physical signs and bacilli in the sputum were both absent, the rays proved that one apex was more solid than the other, and a few days later bacilli and physical signs appeared.

Bouchard⁵ mentions a case which was brought to him on account of the presence of a pulsating area to the right of the sternum. The radioscope, however, showed the absence of the heart on the left side, and it appeared that it was a case of cardiac transposition.

Prof. Bergonié⁶ mentions a case of hydatid cyst, in which the opacity of the shadow, when seen from behind, and its well defined border showed that it was seated nearer the posterior than the anterior surface.

Dr. Stubbert⁷ has examined a series of seventy-three cases by means of the radioscope, and as a result of his work he states "that the fluoroscope enables us to recognize more fully and accurately the degree, position and relation of areas of infiltration and consolidation, and also delineates plainly the limits of these areas. It is unfortunate that as yet no satisfactory photographs have been taken of the images cast upon the fluoroscope plates."

Max Levy-Dorn⁸ has examined an asthma attack by Roentgen's method. In the attack it could be seen that the left half of the diaphragm descended with great rapidity, rose slowly, fell quickly, and so on. The right half, on the contrary, did not move at all, even in forced inspiration. This lasted some minutes, during which the harsh asthmatic breathing was audible. Then an attack of coughing began, the diaphragm, right as well as left, made deep inspiratory and strong expiratory motions; tough mucus was expelled, and the attack was over. The most remarkable feature of the attack was the difference in the two halves of the diaphragm, demonstrating that asthmatic dyspnoea may be due to causes in the bronchi of one lung.

Lortet and Genond,⁹ after experimenting on guinea-pigs suffering from tuberculosis by inoculation, regard their experience as pointing to the possibility that the activity of the tubercle bacillus is impeded by exposure to the X-rays; and they suggest that the method should be put in practice for the treatment of cases of superficial tuberculosis, as for instance, in tubercle of the pleura, or of the mesenteric glands. They believe that the thoracic wall, the lung tissue and the intestine,

even if filled with alimentary matter, offer no resistance to the passage of the rays.

REFERENCES.—¹"Brit. Med. Journ.," July 25, 1896; ²Ibid., Oct. 3, 1896; ³Ibid., Oct. 24, 1896; ⁴Ibid., (Epitome) Jan. 30, 1896; ⁵"Practitioner," April, 1897; ⁶Ibid., April, 1897; ⁷"Med. Record," May 22, 1897; ⁸"Amer. Journ. Med. Sci.," May, 1897; ⁹"Quart. Med. Journ.," Oct. 1896.

SALPINGITIS.

Thomas More-Madden, M.D., Dublin.

Treatment by Aspiration.—In dealing with cases of chronic salpingitis, leading to serous or purulent effusions in the fallopian tubes, the most common origin of which is bacteriological invasion, consequent either on gonorrhœa or on puerperal sepsis, there can be no special reason for departing from the generally recognized principles of therapeutics. The primary objects of all treatment, whether medical or surgical, are, as I presume, not merely the removal of actual disease, but also the restoration, as far as possible, of the structural and functional integrity of the affected parts.

Thus, for instance, if the mammary gland were the seat of a purulent collection, or if, as the late Sir Spencer Wells suggested, the case before us was one of hydrocele, would it not be more advisable to open the one or tap the other, than to ablate the affected gland in either case? Acting therefore on these principles I have for many years in the first instance at least treated by conservative measures, such as aspiration, a considerable proportion of the cases of pyo- or hydro-salpinx that have come under my observation.

The successful results that may be thus obtained in many, though by no means in all cases of this kind, have been proved in my wards in the Mater Misericordiæ Hospital. Moreover, a preliminary resort to such measures, even if unsuccessful, will not interfere with the results of subsequent salpingo-oöphorectomy, if that be then necessitated.

The method of aspirating the tubes referred to is as follows :—

In the first place, to permit the necessary manipulation, the patient should be put under some anæsthetic and placed in the ordinary left lateral gynæcological position. Then the operator introduces the index and first fingers of his left hand through the sphincter upwards and forwards along the outlines of the posterior wall, the fundus being pressed down by his assistant's hand over the hypogastrium. In this way, the tubes and ovaries can be readily palpated, and if there be any inflammatory or cystic enlargement of the former, it may be distinctly recognized as a tortuous elongated sausage-shaped or rounded fluctuating tumour, extending from the side of the uterus outwards to the broad ligament and backwards into Douglas'

fossa. Having thus ascertained the position of the pyo- or hydro-salpinx, the next step is to carefully introduce per vaginam, on the point of the right index finger, a long fine needle, affixed to the aspirator, up to the roof of the posterior vaginal *cul-de-sac*. Through this the needle is to be passed into the retro-vaginal fossa, and thence (guided by the operator's left index from the rectum) up to the most prominent presenting part of the tubal swelling, into which it is to be plunged. The tap of the aspirator is then to be turned, so as to give exit to the contents of the dilated tube, the expulsion of which may be assisted by the steady pressure of the assistant's hand from about the hypogastrium down into the pelvic cavity, and continued until the tube is completely evacuated. After this, the cyst cavity should be washed out with an antiseptic, and the vagina should be rendered aseptic by insufflation with iodoform.

Then no further local treatment, beyond hot irrigation with carbolic solution, will generally be required, unless the tube should, as sometimes happens, again fill, though probably to a lesser extent, when the same procedure may be again repeated until the oviduct has become reduced to its normal size.

Treatment by Curettement and Electricity.—The most common immediate cause of cystic accumulations in cases of chronic salpingitis is mechanical obstruction of the uterine orifice of the oviduct, due either to chronic follicular endometritis, flexion, or, in some instances, supra-involution of the uterus. Under such circumstances the tubal obstruction is most likely to be relieved by dilatation, followed by curetting the diseased proliferating endometrium in the first instance, or by the rectification of the flexion in the second, and by faradization in the last named cases. The faradic current has, moreover, not only in these, but also in other forms of chronic salpingo-oöphoritis, been in some instances successfully employed by Dr. Apostoli of Paris, who generally employs the faradic current of tension, applied in moderate doses and for only a few minutes at a time, for which he claims the most remarkable curative results in such cases.

Another authority on this subject — Dr. Milne Edwards, of Edinburgh, does not believe, however, that the galvanic current is suited to cases where there is definite organic change in the ovaries, but considers that here faradism may possibly be of service.

In those grave, and somewhat more exceptional cases than is generally supposed, in which, from the extent of fallopian disease, or from the implication in its course of adjoining structures, the urgency of the symptoms attending its progress or other causes, it becomes

impossible to deal satisfactorily or safely with such cases by the methods already referred to ; there then only remains for our adoption the complete removal of the uterine appendages. I have elsewhere discussed this operation of which I have now had sufficient actual experience to enable me to say that, unless when absolutely imperative and unavoidable, it is by no means so universally satisfactory either as regards the immediate or the remote condition of the patient operated on as seems to be commonly believed. Without further discussing this topic on the present occasion, however, I shall now merely add that the question of election or necessity may be regarded as the cardinal point to be decided in considering the expediency of removing the uterine adnexa in the treatment of fallopian tube disease. In many instances, unquestionably, as I have already said, that course becomes an unavoidable necessity, and is then the obvious duty of the surgeon.

Topical Treatment.—It should not be forgotten, however, that in probably a no less large number of cases, tubal disease may also be successfully treated by some of the less heroic but equally effectual remedial and conservative local measures to which I have now referred. Such topical treatment should, in most instances, be conjoined with the no less essential constitutional remedies indicated by the special exigencies of each case. But above all, and as a general rule, with those topical measures should be combined a long continued mild **Mercurial course**, in combination with full doses of **Iodide of Potassium**, together with blistering followed by mercurial inunctions over the seat of pain.

REFERENCE.—“Brit. Med. Journ.,” Oct. 23, 1897.

SCABIES.

T. Colcott Fox, M.B.

Jullien,¹ after systematic use of **Balsam of Peru** for five years, strongly recommends this means of cure. There should not be any preliminary bathing and soaping. The balsam is brushed on the skin and then gently rubbed in. The night is the best time for this operation, and then a bath can be taken in the morning. It produces no irritation and is always well borne.

George T. Elliot² on the other hand says styrax has been known to produce acute nephritis, and he has several times observed toxic symptoms after the use of balsam of Peru.

Elliot recommends the following local application as the best. About six rubbings are sufficient :—

R. Sulph. Sublimat.	ʒj	Cretæ Preparat.	ʒj
Saponis Viridis	ʒij	Ungt. Aquæ Rosæ	q.s. ad. ʒj
Styracis Liquid.	ʒjss		

For babies and young children he likes :—

℞ Ichthyol	℥ss	Ung. Aquæ Rosæ	℥iv
Bals. Peruv.	℥iij	Albolene Liquid	℥ij
Lanolin	℥ij		

Linen should be treated by boiling ; worn clothing and bedding by hot air ; gloves, etc., should be burnt.

REFERENCES.—¹“France méd.,” Oct. 30, 1896 ; ²“Med. Brief.”

SCARLATINA.

W. Gilman Thompson, M.D., New York.

M. E. Apert¹ and Comby² both report adversely in regard to the use of Marmorek's antistreptococcus serum in this disease. A. K. Gordon claims benefit from its use. He employed it in but a single case, however. Marked improvement took place in a boy of six years, who was apparently moribund. T. L. Rappapart³ used the serum in sixteen bad cases, four of which died subsequently from various complications. He regards the serum as without influence in scarlatina.

Lindsay,⁴ in diagnosis, places most reliance upon the symptoms of severe vomiting, a sudden rise of temperature, and a disproportionately frequent pulse, in addition to the rash.

Armstrong⁵ discusses the site of first appearance of the rash on the neck below the ramus of the jaw, the lobes of the ears, and occasionally on the temples at the roots of the hair.

J. O. Symes⁶ reports ten interesting cases of secondary rashes in scarlatina. Several of these (urticaria, erythema, etc.), appeared as late as the twentieth day, and in one case on the sixtieth day a “red, hard papular rash” developed.

Obscure cases resembling scarlatina, which occurred at Fulham, are reported by Robert Lee.⁷ The eruption was pink, not scarlet, and the desquamation occurred in powdery form, not in scales. The number of cases is not mentioned. The diagnosis from rubeola is discussed by E. W. Goodall.⁸ He “is not accustomed to lay much stress upon the presence or character of the glandular enlargement,” and relies mainly upon the appearance and distribution of the rash, including the circum-oral ring.

J. O. Symes⁹ regards desquamation alone as an insufficient agent in spreading the infection.

Schill and Schellenberg¹⁰ treated one hundred and ten cases of scarlatina by **Baths** at 95° F., given twice a day. Nephritis did not occur, and desquamation was mild ; at least the baths removed the exfoliating epithelium, and Schill believes that the poison is excreted by the skin

Five interesting cases, concurrent with enteric fever, are added by E. MacDowel Cosgrave,¹ of Dublin, to a discussion of the literature.

REFERENCES.—¹ "Amer. Journ. Med. Sci.," 1896, No. 290, p. 745; ² "Journ. des Prat.," 1896, No. 20, p. 317; ³ "Brit. Med. Journ.," Jan. 2, 1897; ⁴ Ibid., Feb. 20, 1897; ⁵ Ibid., Dec. 26, 1896; ⁶ "Bristol Med. Chir. Journ.," Jan.-Mar., 1897; ⁷ "Brit. Med. Journ.," Dec. 12, 1896; ⁸ "Grey's Hosp. Gaz.," Nov. 21, 1896; ⁹ "Hospital," Oct. 10, 1896; ¹⁰ "Jahrb. f. Kinderh.," Bd. xliii., p. 260; ¹¹ "Brit. Med. Journ.," Jan. 16, 1897.

SCIATICA.

Græme M. Hammond, M.D., New York.

Cappelari¹ reports four cases of sciatica successfully treated by **Salophen**. He was led to try this remedy because his experience with it proved it to be very efficacious both as an anti-rheumatic and an analgesic. The first case was a man, seventy years old, who had suffered from sciatica four weeks. He administered 1 drachm of salophen a day. At the end of several days the pain disappeared completely. A relapse occurred, and again the salophen was resorted to. The same dose given for six days effected a permanent cure. The second case was cured in six days. In the third case the sciatica was first notably improved and afterwards disappeared entirely after the continuance of the remedy. The fourth case was cured at the end of five days, 1 drachm of salophen having been given daily. In none of these instances were any subsequent morbid phenomena observed by the author.

Borischpolski,² adopting the view that sciatica is due to disturbance of the circulation followed by accumulation of the products of metabolism in the affected nerve, has applied the **Schott Douches** in thirty-two cases. Of these, twenty-three were cured, seven were improved, and two remained in *statu quo*. The writer concludes that these douches are of great value in sciatica, a conclusion supported by Bechterew, who states that they are particularly useful in long-standing cases.

Babinski³ draws attention to the absence of the tendo-Achillis reflex in sciatica, not only in cases clearly neurotic, with wasting of muscles, but also in those in which there is no amyotrophy (the so-called neuralgic cases). He believes that the absence of this reflex is of great importance from a diagnostic standpoint, as indicating an organic alteration in nerve, and at once excluding malingering. It also assists in distinguishing true from hysterical sciatica, in which the pain is purely psychical and has not its true seat in the nerve itself. In such cases the reflex is present on both sides.

Richardson⁴ speaks highly of the following formula for sciatica :—

R	Opium		Sodium Salicylate	grs. vss
	Ipecac.	ãã grs. $\frac{3}{4}$	Fl. Ext. Cascara Sagrada	q. s.

Sufficient for one pil. Sig.—One to three a day.

REFERENCES.—¹"Gaz. d. Osped.," 1896, No. 35 ; ²"Brit. Med. Journ.," March, 1897 ; ³"Treatment," March 11, 1897 ; ⁴"Ind. Lancet," May 1, 1897.

SCLERODERMIA.

T. Colcott Fox, M.B.

Brissaud¹ reviews opinions as to the etiology of sclerodermia. He quotes Méry and Dinkler to the effect that the primary change in the diffuse form is an endo-peri-arteritis to which the scleroses are secondary. Méry thinks the arteritis due to an infection. Curiously Méry and Dinkler incline to the opinion that the localized form is tropho-neurotic in origin. Brissaud supports Horteloup's nerve theory, and argues for the spinal origin, perhaps in the sympathetic nerves. Dercum² considers it plausible that sclerodermia consists in an alteration of the collagen in the skin and subcutaneous tissue.

J. Darier and Gastou³ being convinced that of all treatments applicable to localized dermato-scleroses (morphœa) **Electrolysis** is the most efficacious, selected a thickened, nodose, prominent patch on the arm for this treatment. On March 29th they inserted a fine platinum needle in three places to the depth of 1 centimètre and passed for 90 to 120 seconds a current of 4 to 5 milliampères from the negative pole. On April 5th there was manifest improvement, and a similar operation was performed in other parts of the patch, and repeated on the 12th. By the 26th April the results were most encouraging, and the induration had for the most part disappeared.

Hans v. Hebra⁴ said that **Systematic Massage** had given him very good results in sclerodermia. Norman Walker⁵ showed a girl in whom sclerodermia of the upper area had improved under the internal administration of **Thyroid Extract** combined with **Baths** and **Massage**.

REFERENCES.—¹"Presse méd.," 1897 ; ²"Journ. Nerv. and Ment. Dis.," July, 1896 ; ³"Ann. de derm. et de syph.," T. viii., No. 5, May, 1897 ; ⁴"Soc. Viennoise de Derm.," Jan. 27, 1897 ; ⁵"Edin. Med.-Chir. Soc.," June 2, 1897.

SCURVY (in Infants).

A. Jeffreys Wood, M.D., Melbourne.

The occurrence of scurvy amongst artificially reared children has been recognized in England since 1878, and in America since 1889, but until this year (1896) no cases had been reported in Australia.

Dr. A. Jeffreys Wood¹ reports seven cases of infantile scurvy occurring between the eighth and the fifteenth month. The antiscorbutic

element was absent from the food in each case, the diet consisting of condensed milk, concentrated milk, or Nestlé's food.

The concentrated milk sold in Melbourne is subjected to a temperature of 135° F. for about three hours, then raised for a few minutes to 140° F., and finally to a temperature of 170° F. for ten minutes. This process reduces the milk to a fifth of its original volume, and it is diluted when used. This concentrated milk when diluted with four times its bulk of water yielded a full fat percentage (3·5 to 4 per cent.), and the consequence was that the scurvy in these cases was unaccompanied with rickets. In the other cases the symptoms of rickets were well marked owing to the fat percentage being very low. All the cases yielded quickly to a diet of cream, fresh meat juice, and orange juice, with a liberal supply of undiluted fresh cow's milk. (See also "Lactation.")

REFERENCE.—¹"Intercol. Med. Journ. Australasia," April, 1896.

SEA-SICKNESS.

Græme M. Hammond, M.D., New York.

Morel-Lavallée¹ has observed on several occasions the cessation of the vomiting of sea-sickness by giving the patient a teaspoonful of the following mixture every half-hour :—

R̄	Menthol	1 part	Alcohol	600 parts
	Cocain Hydrochl.	2 parts	Syrup	300 parts

Barber² recommends the following formula :—

R̄	Chloroform		Com. Tinc. Lavender	fl. ʒj
	Tinc. Nux Vom.	āā gtt. x	Water	fl. 5x

M. A teaspoonful to be taken every hour until the vomiting and nausea have subsided, care being taken to shake the bottle each time.

REFERENCES.—¹"New York Med. Journ.," Jan. 16, 1897 ; ² *Ibid.*, Feb. 13, 1897.

SENILE INSANITY. (See "Insanity.")

SEROUS CYSTS. See ("Abdominal Surgery.")

SKIN GRAFTING.

Priestley Leech, M.D., F.R.C.S.

Mr. Miller¹ gives his experience of cuticle grafting after the method of Dr. Lusk, which was described in last year's "Medical Annual."

Mr. Miller obtains his grafts in rather a different manner. The surgeon selects a part of the body where cuticle is plentiful (hand or foot). The part is thoroughly cleansed and soaked with 1 in 20 carbolic lotion for at least twenty-four hours. The superficial layers of the cuticle which are softened and soddened by the carbolic lotion, are rubbed and scraped off. The part is again soaked for twelve or twenty-four hours longer with concentrated boracic acid lotion. The part is again thoroughly rubbed dry, and all effete and possibly

septic epithelium removed, when it is ready for grafting purposes. With a knife or razor thin portions of cuticle are sliced off from the thickest parts, more especially from any callosities that may be present—care being taken not to cut to the quick. The grafts are then placed on the raw or granulating surface, and are treated as ordinary skin grafts would be. The new formed cuticle is at first thin, and not so good as that obtained by Thiersch's or Reverdin's method, but in time it becomes quite strong.

The advantage of Mr. Miller's method is that aseptic grafts can be obtained.

Transplantation of Skin Flaps.—Krause² gives the following directions for using large non-pediculated skin flaps. The secret of success is the most strict asepsis and the use of no antiseptic solutions or moist sponges—in other words, a perfectly dry operation.

By baths, curettement and wet aluminium acetate or creolin dressings, he prepares a granulating surface to which the transplantation is to be made, all cicatricial and chronically inflamed tissues being removed. Hæmorrhage is checked by gauze sponges. The part from which the flap is to be taken must be thoroughly cleansed, all antiseptic solutions being washed off with sterilized water. The flaps are cut off in the form of a longitudinal ellipse, and are then shaped to the part to be covered. They are dissected off with a scalpel between the cutis and subcutaneous fat; after dissecting up the tip this is folded in so that the wound surface of the flap is covered as more and more of it is freed. If a very small amount of adipose tissue remains it will not interfere with the nourishment of the flap; this latter shrinks to two-thirds of its size longitudinally, and a little less transversely. No whipping of the flap is required. It is better to wait before transplanting upon the cancellous tissue of bone, as secondary hæmorrhage may occur, and because nutrition of the flaps through newly formed blood-vessels does not occur until the sixth day, and before this the flap is nourished by diffusion from the vessels, which will be impossible if a blood-clot intervenes. Krause never transplants upon freshly severed tendons or upon cartilage because of the lack of sufficient nourishment for the flap. In transplanting upon the arm or leg it is not necessary to suture the flap; the dressing must be most carefully applied.

The limb must be massaged daily after transplanting upon ulcers of the leg. The special indication for this method is the necessity for covering extensive defects upon the arm or leg, especially when a cicatrix is exposed to mechanical injury.

In nineteen cases of ulcer of the leg which Krause treated by

transplantation fifteen were successful after a lapse of three and a half years.

REFERENCES.—¹“Pract.,” April, 1897; ²Volkman’s “Sammlung klinisch. Vorträge,” No. 143, 1896, quoted in “Clin. Journ.,” Feb. 24, 1897.

SMALL-POX (Variola). *W. Gilman Thompson, M.D., New York.*

Sidney Coupland¹ gives valuable tabular and coloured statistics of several thousand small-pox cases. This disease continues to be much more prevalent in England than the United States, probably because there is more opposition to vaccination there.

Attempts are constantly being made to prevent the pitting. For this purpose Castellvi² uses :—

℞ Corrosive Sublimate	20	Alcohol	100
Citric Acid	20	Ether, q.s., to make	1 litre

With this solution he sprays the face three times a day. He then applies with a soft brush :—

℞ Glycerin	120	Corrosive Sublimate	8
M.			

In thin-skinned persons this should be used with caution, as blistering may follow.

Th. Faure³ prefers :—

℞ Iodoform	gr. xxx	Collodion	3j
M. Sig.—To be painted upon the pustules frequently.			

This is said to hasten the drying, and prevent extension of pustulation.

Beclère and Dauchey⁴ prescribe :—

℞ Mercury Ointment	12	Black Pitch	3
Yellow Wax	5		

M. Sig.—Apply to pustules.

They also vaccinate at once with vaccine serum. (See also “Rashes.”)

REFERENCES.—¹“Lancet,” Feb. 20, 27, 1897; ²“Gac. Med. Cat.,” Dec. 15, 1896; ³“Pract.,” May, 1897; ⁴“Journ. de clin.,” iv, No. 18.

SNAKE-BITE.

James Cantlie, F.R.C.S.

Calmette’s Antivenene Serum has gained in reputation during 1897. From various sources successful records of its application have been reported, and in several other ways the treatment of snake-bite is being conducted more rationally.

The first treatment to be adopted in all cases of snake-bite is the application of a ligature or ligatures above the seat of the wound. By the natives of India this is seldom done immediately, as by

various means, mostly superstitious, they attempt to "test" the bite, as to whether it is that of a venomous snake or not; in this way much valuable time is lost. The Chinese, on the other hand, immediately adopt the ligature when bitten by a snake. Suppose it is the foot that has been bitten, as many as six tight bands, twisted like tourniquets, so as to cause a cessation of both arterial and venous circulation, are applied between the wound and the groin. The hand is similarly treated, and the skill of the European doctor is only called for to heal the ulcerated circles, which show but too clearly, where the skin had sloughed in consequence of the constrictions. It may be on account of this treatment, but certainly it is a fact, that but few, very few, Chinese die of snake-bite. The snakes, it may be argued, are less deadly than in India; but the cobras are not unknown in Hong Kong, for instance, and, although coolies are often bitten, a death is a very rare occurrence.

In addition, however, to the application of a tourniquet, it is proved that good can be done both locally and constitutionally by caustic applications to the wound and by subcutaneous injection of antivenene. The wound, after the ligatures to the limb have been applied, should be encouraged to bleed by scarifying or by being incised fairly deeply to ensure a good flow of blood; and a fluid caustic, such as nitric acid or caustic potash, should be applied.

It would appear that there are two venoms in snake-bite to be dealt with, one which affects locally and another which causes bulbar (or general) intoxication. These two can be separated chemically and physiologically, and evidently require different antidotes. The poison in the wound is destroyed by a 1 in 60 solution of hypochlorite of calcium and for local use in preventing the absorption of venom it (also chloride of gold or any alkaline hypochlorites) is an essential.

For 'constitutional' treatment, Calmette's antivenene serum ought to be at hand. Drs. Keatinge and Ruffer, of Cairo, describe a very interesting case of recovery from snake-bite in the case of a girl, aged thirteen. She seemed at the point of death, when 20 c.c. of Calmette's antivenene injected under the skin of the abdomen was followed by recovery. This was done three hours after being bitten; and the only further amount of serum introduced was 10 c.c. on the second day after the bite.

It would seem, therefore, that snake-bite, under modern scientific enquiry, may in future yield to rational methods of treatment with excellent hopes of saving life.

SPINE (Deformities of). (See "Pott's Disease.")

SPRAINS.*Priestley Leech, M.D., F.R.C.S.*

TREATMENT.—Mr. Tubby¹ gives the following indications for the treatment of this common injury:—

If seen within the first two or three hours apply **Cold** vigorously for ten to fifteen minutes, either by pouring cold water over the joint or by the application of ice or by the use of spirit lotion; then wrap the joint round with lint or other suitable material soaked in cold water or in spirit lotion, and cover with three or four layers of cotton wool, place the joint in that position where there is least potential cavity in it, and firmly bandage.

If seen later, **Hot Applications** should be frequently applied, either hot water or hot vinegar and salt; keep the joint at rest and maintain steady pressure on it with cotton wool.

Besides this, especially if the amount of swelling is considerable, properly directed and applied **Friction** is necessary. The object of friction is to empty the lymphatics of a certain amount of coagulated lymph which blocks them, and in rubbing the parts it is always advisable to begin to rub that part of the swelling which is most distant from the joint, thus emptying the lymphatics at that part first. Together with the rubbing frequent ablutions of the part with hot water or the application of hot vinegar and salt should be used at this stage.

REFERENCE.—"Practitioner," April, 1897.

STOMACH (Diseases of the). *W. Soltau Fenwick, M.D., M.R.C.P.*

CHEMISTRY.—Friedenwald¹ considers that Boas's test for hydrochloric acid is in many respects of greater practical value than that of Gunsburg. Phloroglucin is very unstable, and rapidly undergoes decomposition when kept in solution; it is also expensive. Resorcin, on the other hand, is a cheap drug, and may be kept for years in a dark bottle without losing its sensitiveness. The author is in the habit of employing filter paper which is dipped in the test solution and afterwards dried.

Toepfer² employs dimethylamidoazobenzol as a test for free hydrochloric acid in the following manner: A few drops of a 0.5 per cent. solution are added to an equal quantity of the gastric filtrate. If free hydrochloric acid is present in the latter the mixture acquires a reddish colour, but if it is absent the fluid becomes pale yellow. For quantitative examination 10 cubic centimètres of the gastric filtrate are mixed in a porcelain dish with a few drops of the test solution, and then triturated with the deci-normal solution of soda until the fluid becomes pale yellow. The number of cubic centimètres of the soda

solution employed for this purpose multiplied by 0.0365 represents the percentage of free hydrochloric acid present in the gastric filtrate.

As an easy method of demonstrating the presence of ammonia, Sticker³ recommends the following modification of Streng's test : To a drop of the gastric juice a drop of a 10 per cent. solution of NaOH is added on a porcelain plate. A drop of Nessler's reagent is placed on the plate in the immediate vicinity. The two drops are then covered with a watch-crystal. Ammonia is liberated from the drop of gastric juice and enters into combination with the Nessler's reagent, producing ammonio-mercuric iodide, which causes a yellow, yellowish-red to greenish-red cloudiness of the latter. Rosenheim found that the food contained only a very small amount of ammonia, and held that most of the latter found in the gastric juice was produced by the peptic glands. Sticker doubts this assertion, and claims that the ammonia in the gastric contents is derived from the saliva swallowed with the food.

DIAGNOSIS.—*Gastrodiaphany*.—Martius⁴ has made some experiments to determine the outlines of the normal stomach by means of an incandescent lamp fixed in the eye of a gastric tube. The researches were conducted both when the stomach was full and also in the fasting state. The author finds that a healthy stomach when empty usually reaches as low as the umbilicus, but when full the lower border may descend as far as a line drawn across the abdomen between the iliac crests. The area occupied by the stomach also varies according to the position of the body, being most extensive when the patient stands upright. These statements are severely criticised by Meinert⁵ who exposes several of the fallacies connected with the practice of direct illumination of the stomach.

I.—ABNORMALITIES AND INJURIES.

Gastroptosis.—Bial⁶ says that the relation of enteroptosis, including gastroptosis, to nervous affections of the intestinal tract is of considerable interest. He has investigated the changed position of the stomach in men, as they are less susceptible to functional nervous affections than women. He has examined fifty men of various ages, and those were selected in whom gastroptosis was suspected, including some with and others without gastric symptoms. To determine the position of the stomach, air was forced into it through the tube which had been used to withdraw the test meal. In this way the position of the greater and lesser curvature can be ascertained. The results obtained were controlled by percussion and palpation.

The author gives these results in two classes : (1.) Persons in whom

there was a flat and a more or less paralytic thorax or other thoracic abnormality, and (2,) persons with more or less downward displacement of the lower margin of the lungs. There was also a small group of cases with no abnormality of any kind. In rickety and other deformed chests, as well as normal chests, with downward displacement of the diaphragm, dislocation of the stomach was frequently found, but these abnormalities do not necessarily produce it. There was gastropptosis in twelve of eighteen cases with thoracic deformity, and in eighteen of twenty-six cases of emphysema. Thus dislocation of the stomach is not such an uncommon event in men. In seventeen of the thirty-six cases with displaced stomach there was no trace of gastric symptoms. In women also with well marked gastropptosis no complaint may be made, and yet others with only slight displacement may present marked symptoms. Among those with gastropptosis there were the characteristic pains, etc., in four cases, and in two of these there was hyperacidity; in the remaining two the symptoms disappeared under general treatment directed to the nervous system. In one case with gastric crises, dislocation of the stomach was present, but in two other cases of locomotor ataxia there was gastropptosis without crises or gastric symptoms. In the cases with gastric disturbance but no nervous symptoms, the motor or sensory functions of the stomach were mostly impaired. The gastropptosis may very possibly produce motor insufficiency, but other causes were present here, such as phthisis. In some cases with downward displacement of the lower margin of the lungs, chronic alcoholism was also present. Thus in nearly all the cases conditions were present sufficient to explain the gastric symptoms without appealing to the gastropptosis. Thus this gastropptosis is not to be included among ordinary causes, but undoubtedly gastric symptoms may be produced or accentuated by it. Usually changes in the position of the stomach in man do not produce symptoms. The difference between men and women in this respect must be due to the different vulnerability of the nervous system.

Schwardt⁷ argues that displacement of the stomach is only one symptom of neurasthenia, and that treatment should be directed rather to the underlying disease than to the enteropptosis, moveable kidney, or other local lesions, though these lesions in themselves tend to produce stasis of food and auto-intoxication. Thus, he gives the case of a young woman in whom these disorders were present with membranous colitis, and in whom general hydro-therapeutic measures brought about a cure of the local troubles. Moreover, he considers that auto-intoxication from enteropptosis goes on to produce compensatory or antagonistic hyper-secretion of the thyroid, and, in a word,

is the cause of Graves's disease. Similar instances of compensation are, he thinks, to be found in the diarrhœa, sweating, and vomiting which occur in these neurasthenic sufferers. If this be true the thyroid endeavours to neutralize the effete matters in the blood, and in so doing produces other derangements. It is, of course, right to remark that many cases of enteroptosis are mechanically produced, and do not necessarily cause auto-intoxication, nor do they always occur in neurasthenics.

Congenital Stenosis of Pylorus.—J. Thomson⁸ describes a form of congenital gastric spasm. The children are born in perfect health at full time, but within a few days or weeks incessant vomiting sets in, terminated by death. The pylorus proves to be enormously hypertrophied, while except for the hypertrophy the tissues are quite normal both there and elsewhere in the body. He regards it as due to nervous disorder of the stomach and pylorus which leads to ill-co-ordinated action. The cause is, he adds, to be found in a failure of development.

Injuries.—Spontaneous laceration of the stomach being of rare occurrence, the case described by Brayn and Ridley⁹ is one of considerable interest. The subject was a healthy woman, thirty-seven years of age, who, after a full meal, was suddenly seized with hæmatemesis and succumbed in about half-an-hour. At the necropsy the abdominal cavity was found to contain about 10 ozs. of bloody serum. The stomach was much distended, and in the anterior wall near the cardiac end of the organ there was a rent about three-quarters of an inch in length, which extended through the entire thickness of the wall. The mucous membrane appeared perfectly healthy and the walls of the stomach showed no signs of degeneration. The other organs were healthy.

Ebstein¹⁰ reports a case where a piece of the pyloric mucous membrane was brought away in the eye of a stomach tube, and he believes that such an accident is by no means infrequent. He therefore recommends that the stomach should be slightly distended before the tube is passed, and that the instrument be withdrawn slowly, while water is being forced into the viscus.

Landstrom¹¹ records the accidental swallowing of a piece of stomach tube forty-eight centimètres long and eleven wide. For some days afterwards the patient, who was the subject of gastric ulceration, experienced severe abdominal pain and suffered from attacks of vomiting and hæmatemesis. Eight days after the accident the tube could be felt, doubled upon itself, in the right iliac fossa. Laparotomy was performed and the instrument extracted from the ascending colon.

II.—CANCER OF STOMACH.

As the result of the examination of forty-two cases of cancer of the stomach, Hammerschlag¹² gives some data useful in the early diagnosis of cancer of the stomach. "If a number of examinations during a period of three or four weeks show a constant absence of free hydrochloric acid, albumin digestion reduced below 15 per cent., much lactic acid, and numerous long bacilli, and if no improvement occurs in this time, the diagnosis of cancer can be made almost with certainty, even if tumour and cachexia are absent. The recognition of a loss of motor power, soon appearing and increasing rapidly, and the finding of small quantities of blood in the stomach-contents, are also important. The diagnosis is not certain, however, for in dilatation without cancer lactic acid may be present, and the chemical conditions in cancerous stenosis of the pylorus vary according to the previous occurrence or absence of ulcer. Neither deficient HCl nor marked loss of peptonizing power is peculiar to cancer. For the production of lactic acid three factors are necessary: absence or marked reduction of HCl, great reduction of ferments, and motor insufficiency. In such cases histological examination shows disappearance of the specific glandular elements in foci, the cells being replaced by cylindrical epithelium. The demonstration of the constant occurrence of the intense lactic-acid formation warrants the conclusion that total or partial atrophy of the peptic glands and motor insufficiency exist, a combination seen earlier and more frequently in gastric cancer than in any other condition."

TREATMENT.—According to Huchard¹³ **Chlorate of Sodium** is hardly toxic in doses of 4 drachms per diem. When administered in full doses to cases of cancer of the stomach it exercises a beneficial local action upon the morbid growth. Patients submitted to this treatment are greatly relieved, the pain and vomiting ceasing while the appetite and general nutrition improve.

Jacobi¹⁴ advocates the use of **Methylene Blue** in cases of gastric cancer. If begun in small doses (1 to 2 grains) daily it seldom fails to afford relief.

To increase the appetite Robin¹⁵ recommends a decoction of the bark of **White Condurango** (15 to 250, boiled to 150) in dessertspoonful doses before each meal, or the tincture of **Nux Vomica** or **Ignatia** in 5 or 6-drop doses before meals. After meals a capsule of **Ammonium Chloride**, 2½ grs.; **Sodium Bicarbonate**, 4 grs.; and **Dover's Powder**, 1½ grs., is given. For assisting digestion during the meal a glassful of **Hydrochloric Acid** in water (166 to 1000) is sipped; and in the midst of the meal is taken a powder consisting of **Pepsin**, 7½ grs.;

Maltine [diastase], $1\frac{1}{2}$ grs. ; and **Pancreatin**, the same quantity. For diminishing the fermentation, **Sulphur**, sublimed, washed or precipitated, $2\frac{1}{2}$ to 3 grs. ; or a dessertspoonful of **Ammonium Fluoride** in water (1 to 300), during the meal. If there is very acid vomiting, severe pain, or stenosis, lavage is useful.

III.—DILATATION OF STOMACH.

Etiology.—Thomas¹⁶ publishes twelve cases in which pyloric obstruction was due to adhesions. As regards etiology, alcoholism and tuberculosis were present in one, one was preceded by enteric fever, two by hepatic colic, three by gall stones and cholecystitis, and one by gastric ulcer. The symptoms are those of obstruction in general, but sometimes pyloric spasm is a factor, as proved by the results of washing out the stomach, and the intermittence of the symptoms. Bouveret gives two symptoms as being more or less characteristic : (1,) By reason of adhesion of the pylorus to the gall bladder, the former is kinked at this point. Therefore, if the patient is about, the dilated stomach drags on the pylorus and causes frequent vomiting, while if lying down the stomach empties itself more readily, and vomiting is less frequent ; (2,) If the amount of food has been lessened vomiting diminishes in frequency ; if a good meal is ordered the symptoms of stenosis return. Another point is that on insufflating the stomach the pylorus remains fixed at the level of the right costal margin. The illness has probably lasted a long time, and has been preceded by a painful affection of the stomach or liver, and is accompanied by pronounced emaciation and often by hypersecretion of HCl, which latter sign is not present in cancer unless developing in an old ulcer. The treatment medically consists in alleviating or curing spasm, if this is present. As regards surgical treatment, the author agrees with Doyen in believing that gastro-enterostomy will prove to be a safer operation than separation of adhesions. The latter operation seems to have given good results, however, unless the adhesions involved the gall bladder when it has usually proved fatal.

Nervous Complications.—Barber¹⁷ observed a case of tetany in a man who had never had any symptoms of gastric ulcer nor showed any signs of dilatation of the stomach. Fleiner¹⁸ has observed three cases of tetany associated with dilatation of the stomach, and suggests that the nervous phenomena are due to reflex action. According to this author the stomach becomes distended by hypersecretion, fermentation, or deglutition of air ; vomiting occurs, and the sudden contraction of the stomach walls causes tonic convulsions of the extremities

Carr¹⁹ relates a case of chronic dilatation of the stomach complicated by peripheral neuritis. The patient had not indulged in alcohol, nor could any definite cause for the nervous affection be determined. The author considers, therefore, that in all probability the neuritis was dependent upon absorption of toxins from the diseased stomach.

IV.—FUNCTIONAL DERANGEMENTS OF STOMACH.

According to Hayem²⁰ gastro-succorrhœa is the result of gastric retention, since in such cases he has invariably found after death that there existed some mechanical obstacle in the neighbourhood of the pylorus which hindered the evacuation of the stomach. The two principal causes of partial retention of the gastric contents are incomplete stricture of the pylorus and partial occlusion of the duodenum. The former is generally the result of cancer or ulcer, the latter of biliary affections with cholecystitis. The differential diagnosis is easy. When the liquid rejected by the fasting stomach is abundant and mixed with food taken the day before, the seat of the obstruction is usually to be found at the pylorus; when, on the contrary, the liquid is relatively small in quantity and coloured with bile, in which food can only be detected by the microscope, the stricture is below the pylorus. The only treatment which gives relief, apart from the performance of gastro-enterostomy, is the employment of **Lavage** combined with a strict regime.

Goupault²¹ considers that hyper-acidity is an expression of the hyper-activity of all the stomach functions, motor activity and pyloric spasm being usually added, from which arise functional disturbances such as eructations and even dilatation of the stomach. Hence the treatment should be complete rest, at first nutrient enemata, and then very easily-digested food with sedatives and artificial digestives.

TREATMENT.—Diet.—According to Upshur²² the first indication in the treatment of chronic dyspepsia is to put the patient upon such a diet as will insure the least fatigue to the duodenum. In the beginning an exclusive **Milk Diet** is best; if it does not suit the patient, it may be given skimmed, or if it still disagrees or is distasteful, the following preparation is palatable and beneficial in most cases: To a tumbler of sweet milk, add the white of an egg whipped up to a light froth and a wineglassful of lime-water. Such farinaceous food as barley gruel or oatmeal may be combined with it. Animal broths may be allowed, or some of the prepared meat essences; they stimulate the appetite and the secretion of the glands. When the demand comes for an improved diet, boiled fish, oysters, sweetbread, the white flesh of fowl once a day, and soft boiled eggs, one or two 4

day, may be allowed. Bread one day old, sweet and light, macaroni boiled in milk, and rice may also be allowed. Coffee is contra-indicated, and tea should only be allowed when largely diluted with milk; cocoa which contains pancreatin is a very pleasant drink. Butter is to be given in moderation. Wines are contra-indicated, except under special conditions, to be determined for each individual. Mineral waters do good, and health resorts are useful by change of air and scene, while the waters are valuable, in those cases where little water is drunk, as a means of correcting constipation. Cheese, crabs, lobster, richly-dressed meats, too much fat, pastry, and vegetables are to be avoided. The patient should be earnestly enjoined as regards the thorough mastication and insalivation of food, the harmfulness of haste in eating, and the necessity of a sufficient rest before and after meals. Tobacco-chewing and smoking should be forbidden, as impairing the character of the saliva and interfering with pancreatic secretion. Careful examination of the mouth should be made, and if the teeth are imperfect, artificial ones should be substituted for them. All causes which have combined to bring about the attack should be removed. A change to a cooler climate is advisable; early hours of sleep and regularity as to the time of meals, and the interval between them, should be earnestly advised.

Electricity.—Max Weiss²³ reviews the work of experimenters and clinicians on this subject from Duchenne and Kussmaul onwards. He summarizes their results and his own experience as follows: In paretic conditions of the œsophagus and cardia (for example, rumination) galvano-faradization, which is the most powerful of muscular stimulants, is to be recommended. One pole of a galvanic battery is connected with the opposite pole of the secondary coil of a Dubois-Raymond, the other (usually the anode) with a broad electrode placed over the sternum. The free pole of the secondary coil is in connection with an electrode which is introduced either into the œsophagus or stomach by means of a sound, or applied to the inner margin of the sterno-mastoid on either side. The sitting lasts five minutes if this electrode is used internally, ten if externally. Gastralgias and gastric neuroses indicate galvanism; the electric sound is only required in very obstinate cases, the affection yielding usually to external galvanization with a current commencing at 5 milliamperes, and gradually increased in the course of treatment to 25 milliamperes. The vomiting of hysteria and of pregnancy, and that seen in gastric crises, requires external galvanization with a large electrode applied over the dorsal vertebrae, and a smaller one over the tender spot in the epigastric region; the current should be fairly strong—up

to 20 milliamperes. Obstinate gastralgia due to the cicatrization of a gastric ulcer may yield to internal galvanization with a current of 10 to 15 milliamperes. Motor insufficiency of the stomach, with dilatation, is best treated with internal faradization, which may be advantageously combined with massage; external galvano-faradic massage is also strongly recommended, the epigastric region being vigorously stroked with an electrode leading from the free pole of the secondary coil. Internal electrical treatment is also of value in correcting secretory defects in the stomach, sub-acidity requiring faradization, super-acidity galvanization. Enteralgias derive much benefit from systematic stationary and transverse galvanization of the abdomen with powerful currents; the kathode is placed over the dorsal spine, the anode on the epigastrium. Electrical methods are extremely valuable in the treatment of habitual constipation: the best for this purpose are galvano-faradization, galvano-faradic massage, and in very susceptible patients the galvano-faradic band. In simple galvano-faradization the electrode connected with the free pole of the galvanic apparatus is inserted into the rectum, while that attached to the secondary coil is stroked over the skin round the navel and along the large intestine; massage should not be combined with this procedure. Galvano-faradization is also of much value in atony of the gut, and has been recommended by some as an adjunct in the reduction of volvulus and incarcerated herniæ.

Artificial Digestives.—Armstrong²⁴ speaks highly of the use of **Takadiastase** in cases of certain forms of dyspepsia and in gout. He usually prescribes it in doses of 3 to 5 grains immediately after food, and states that he has found the flatulence and acidity greatly relieved. Kiernan has also achieved good results by the employment of takadiastase in the amylaceous dyspepsia of neurasthenia.

Leo²⁵ recommends the use of takadiastase in gastric hyperacidity, both when uncomplicated and in connection with ulcer. In these instances the starchy foods should be taken at the commencement of the meal, and when taken with the above-mentioned remedy the conversion of the starches is continued in the stomach for a long time. He has noted that in instances of hyperacidity the pain has been, by this method, markedly diminished. In addition, the obstinate constipation so often associated with this symptom has generally disappeared.

Jacobi²⁶ considers that **Tincture of Iodine, Oxide of Zinc and Arsenious Acid** are the most reliable drugs for the treatment of *persistent vomiting*. The former is best administered in 1-minim doses every two hours, while the two latter are given in doses of

$\frac{1}{200}$ of a grain and $\frac{1}{3}$ of a grain respectively, three or four times a day. Marvin and Bradbury²⁷ have found **Bichromate of Potassium** (gr. $\frac{1}{12}$) of considerable value when administered on an empty stomach. **Faradization** of the pneumogastric nerves has been used with success by Bonnefin²⁸ in severe cases of hysterical vomiting.

V.—INFLAMMATION OF STOMACH.

Hayem²⁹ describes two varieties of degenerative gastritis, the fatty and the inflammatory. Inflammatory degeneration of the gastric epithelium takes the form of serous or albuminoid infiltration. The former is characterized by the interposition of clear spaces between the epithelial cells; the latter is constituted by a genuine necrobiotic process. Sometimes the epithelial, and more particularly the adelo-morphous, cells assume a granular form (granular disintegration, coagulation necrosis of Weigert), after which they become absorbed; at other times the epithelium undergoes a peculiar change, a kind of lamellization which Hayem describes as an epidermoid condition. In addition to granular and epidermic necrobiosis there is also a chemical necrobiosis observed in subjects who consume alcohol, absinthe, etc., in excess. This shows itself under granular or transparent forms. In the granular variety the epithelial cells form small corpuscles in which neither nucleus nor protoplasm can be distinguished; this variety is met with in alcoholic subjects. Transparent necrobiosis is characteristic of those who consume excessive quantities of absinthe, and in some cases the transparent changes to a vesicular condition. The above changes should be distinguished from genuine sloughing which may be met with in the stomachs of alcoholic subjects. The different varieties of degeneration are observed chiefly in patients who have died of infectious diseases, and in confirmed alcoholics. Bacteriological researches carried on by Lyon show that a certain part is played by microbes in their production. In one case spirilla were detected in the cavity of the stomach; in another microbes were found in the intertubular connective tissue.

Phlegmonous Gastritis.—According to Leith³⁰ there are only about eighty-five cases of phlegmonous gastritis at present on record, and of these eleven have occurred in this country. There are two well-marked varieties of the disease, the diffuse and the circumscribed. In the former the suppurative process is more or less widely diffused throughout the stomach wall; in the latter definite collections of pus form in the sub-mucous coat of the organ, producing a localized abscess of the stomach. The disease is much more frequent in men than in women, the relative proportion being about five to one. It is

most usually encountered between the ages of twenty and fifty. The complaint has been attributed to the abuse of alcohol or dietetic errors, but in the vast majority of cases it appears to result from infection of the sub-mucous tissue by the streptococcus. Occasionally the micro-organism may gain an entrance through a mechanical abrasion of the surface of the stomach (injury), or through a simple or cancerous sore, but as a rule the gastric disease must be regarded as a local expression of a general infection. The clinical features of the disease comprise a sudden and severe attack of epigastric pain, fever, delirium and vomiting. The chief physical signs are tenderness over the region of the stomach, accompanied, perhaps, by a sense of increased resistance, and, after a short time, by prominence of the part and general meteorism. Life is seldom prolonged for more than a week.

Ebstein³¹ draws attention to the occasional occurrence of acute nephritis as a complication of gastro-intestinal catarrh. The association of the two diseases in childhood is well known, but in adult life the phenomenon has been rarely observed. The author relates the case of a young woman who, after suffering from gastric pain and diarrhoea for six months, was suddenly attacked with acute inflammation of the kidneys, which ended fatally in a few days. After death, chronic follicular enteritis with ulceration of the bowel and enlargement of the mesenteric glands was discovered, while the kidneys presented the ordinary appearances of acute inflammation. The author is of opinion that the renal disease was due to the absorption of poisonous material from the digestive tract.

TREATMENT.—Carter³² recommends the use of the continuous **Hot Douche** (105° F.) containing 3 per cent. of **Bicarbonate of Sodium**. This may be occasionally alternated with a **Cold Douche** (70° F.). If there is much mucus in the vomit the stomach may be washed out with weak soapsuds, or a 5 per cent. solution of **Hydrozone**.

Lavage of the stomach with nitrate of silver, first employed by Forlanini, is often of considerable value in long standing cases of hyperacidity with chronic catarrh. The stomach is first washed out with a weak solution of bicarbonate of sodium in order to cleanse it from any excess of mucus, and afterwards with warm water containing about 20 grains of nitrate of silver to the quart. Finally, the organ is repeatedly douched with a solution of chloride of sodium (45 grains to the quart). Under this method of treatment the motor power of the stomach steadily improves, and the quantity of food which remains in the organ after each meal steadily diminishes. Constipation and vomiting disappear, and the patient gains both in weight and strength.

VI.---NEUROSES OF STOMACH.

Oettinger³³ calls attention to a form of gastric crisis characterized by absolute intolerance of food, lasting from a few hours to a few days, and appearing at more or less prolonged intervals, the gastric functions and general health between the attacks being absolutely normal. The pain which is generally present causes the illness to have such a resemblance to the crises of locomotor ataxy that Charcot thought such cases were really unrecognized tabes. Such, however, is not the case. These attacks are rare, but still occur, in other organic nervous diseases, such as disseminated sclerosis, general paralysis, etc., but are much more common in the neuroses, especially hysteria, when they must be distinguished from ordinary hysterical vomiting. The latter is incessant and may continue for a long time; the former lasts at the most a few days; pain is a prominent symptom, and the vomit is abundant and consists of a hypersecretion of active gastric juice, which is often richer in HCl and chlorine than the normal. This is the rule also in tabes dorsalis, though Hayem has shown that exceptionally there may be hyposecretion. It is, however, when these symptoms are a manifestation neither of organic disease, nor of hysteria or neurasthenia, that the crises are said to be idiopathic ("crises gastriques essentielles"). Even then they are almost always found in nervous and excitable patients. In all cases they constitute a true disease of the gastric nerves, the three cardinal symptoms being pain, vomiting, and disordered secretion. This is supported also by the experiments of Schneyer, who found that stimulation of the vagus causes gastric secretion even in the absence of food. The author compares the hypersecretion in these crises with the sialorrhœa which may occur in locomotor ataxy, with the salivation observed by Klippel in facial neuralgia, and with the variety of asthma where the catarrhal element predominates over the spastic. This disease is probably the same as the intermittent form of Reichmann's disease, and differs only from Rossbach's "gastroxynsis" (Lépine's "gastroxie") in that in the latter vomiting of gastric juice is preceded by headache and a sensation of warmth or burning in the epigastrium.

Hogarth³⁴ relates the case of a man who suffered for three years from severe neuralgic pains in the abdomen, and loss of flesh. No cause for the symptoms could be found, and treatment completely failed to afford relief, until it was discovered that the patient was in the habit of taking large quantities of saccharine every day. When this was prohibited the abdominal symptoms soon ceased and the patient eventually regained his normal health. The late Dr. Kane, of

Kingston, once communicated a case to the editor, where the symptoms of chronic saccharine poisoning closely resembled those of cancer of the stomach.

In a paper dealing with hyperæsthesia of the stomach and its diagnosis from gastric ulcer, Glynn³⁵ points out that pain after food relieved by vomiting is a symptom common both to nervous dyspepsia and ulceration. The various pains and hyperæsthesiæ to which chlorotic patients are liable are, according to the author, evidences of hysteria. In such cases tremor of the eyelids is an important sign. Those subjects of chlorosis who do not exhibit symptoms of hysteria rarely suffer from neuralgias or painful digestion. Even the pain which arises from ulceration of the stomach is often of the nature of hysterical neuralgia.

VII.—ULCER OF STOMACH.

Widal and Meslay³⁶ report the discovery of a gastric ulcer in a patient who died from staphylococcic pyæmia. The ulcer presented perpendicular edges, and had for its base the subperitoneal adipose tissue. They consider that it was first formed by microbial action, and then enlarged by the gastric juice. Such ulcers have been found in similar septic cases and in animals killed by experimental infection. Bacteria may be absent in the ulcers from the removal by auto-digestion of the necrotic area. No symptoms of ulcer were observed during life in this case.

Soltau Fenwick³⁷ contributes an elaborate article upon simple ulceration of the stomach in childhood. He recognizes two varieties of the disease—the acute perforating and the chronic ulcer. Of the former variety there are nine cases on record, and to this number the author adds four additional ones, making in all a total of thirteen. In five instances the disease developed immediately after birth, and as a rule the ulcer occupied the cardiac region of the stomach in the vicinity of the great curvature. This fact, taken in conjunction with the hæmorrhagic appearance of the ulcer, appears to denote that the congestion of the stomach which occurs during the process of delivery may occasionally lead to extravasation of blood into the gastric mucous membrane which afterwards undergoes digestion by the gastric juice with the production of a veritable ulcer. The symptoms of the disease are vomiting, hæmatemesis, and mæna within the first fortnight after birth. Amongst the other exciting causes of the disease, an attack of an infectious fever, such as pneumonia, diphtheria, or typhoid, septicæmia, tuberculosis, or severe burns of the body, are the most important. In all, six cases of chronic gastric ulcer

have been recorded. In each instance the disease exhibited thickened and indurated edges, while its base was adherent to some neighbouring organ. The usual seat of the ulcer was in the pyloric end of the stomach near the lesser curvature. The duration of the complaint varied from two to fourteen years. Pain and vomiting after food, with attacks of hæmatemesis, were the usual symptoms of the disease. In two cases perforation took place into the peritoneal cavity ; in one instance the ulcer perforated the left pleura and set up empyema, and one case succumbed to fatal hæmatemesis. The author discusses the etiology of the disease and considers that in every instance the ulcer commences in an acute manner, and afterwards assumes a chronic type owing to imperfections of its blood supply, adhesion to some adjacent organ which prevents its necessary contraction, or to want of rest arising from its proximity to the pylorus.

Dreschfeld³⁸ recognizes the following clinical forms of gastric ulcer : (1,) The acute hæmorrhagic form, in which profuse hæmatemesis occurs as one of the first symptoms of the disease. The case may either end fatally at once, may rapidly become convalescent, or may gradually be converted into one of chronic ulceration ; (2,) The acute perforating ulcer, which is characterized by sudden perforation of the stomach without any antecedent symptoms of importance ; (3,) The chronic dyspeptic form where the main symptoms are those of moderate indigestion and only occasional vomiting ; (4,) The chronic gastralgic form in which the gastric pains predominate and vomiting is either absent or infrequent ; (5,) The chronic hæmorrhagic ulcer which resembles the dyspeptic form with hæmatemesis superadded.

TREATMENT.—Kramer³⁹ has reported very good results from the use of doses of **Subnitrate of Bismuth** after **Lavage** has been gently employed, until the water left the stomach perfectly clear and transparent. He injects into this organ a mixture composed of 6 drachms of subnitrate of bismuth in 200 cubic centimètres of warm water. In the course of five or six minutes the bismuth is deposited over the entire surface of the stomach. These applications are made every two days until a cure is effected, as little food being given by the stomach as possible. The results are said to be remarkable, and in no instance were symptoms of intoxication by bismuth produced. Thus, in nine cases the cure was most rapid ; in two others the results were not so good. Altogether, as much as 100 to 200 grammes of bismuth may be used in this manner, without danger of producing symptoms of intoxication. It is needless to add that the bismuth must be absolutely pure.

Ratjen⁴⁰ considers that the principal point in the treatment of

gastric ulcer is to afford complete physiological rest to the stomach. With this object the patient should remain in bed and no food be allowed by the mouth for ten days. As rectal feeding is irritating in almost all cases, the enemata should be as large as can be conveniently borne. The less often they need be given the better. An enema of 8 ozs. of milk, with 1 to 2 yolks of eggs, and a pinch of salt, with a tablespoonful of red wine, and a tablespoonful of flour, as recommended by Boas, was found to answer best. This enema given three times a day gives a sufficient supply of food for the first ten days. It is advisable in all instances to give in addition an enema of plain water once a day to clear out any *débris* from the rectum. At the end of ten days, feeding by mouth with kephyr, or whey, or raw meat juice, or very finely pounded meat may be begun, and so gradually on to solid food.

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STRABISMUS.

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Taylor,¹ after speaking of the various methods of operating for strabismus, describes a modification of his own as follows: "I hook up the tendon of the internal rectus and divide all its connections with the eyeball, then pulling it well forward, and by two horizontal incisions made with scissors convert it into a narrow strip, transfixing the base of this strip as far back in the orbit as possible, with a large curved needle connected with a thread armed at both ends. Before drawing

the thread through, cut off as much of the tendon as may be necessary, then, having drawn it through, with the remaining needle, pierce a small portion of the *sclerotic* about the site of the inferior rectus insertion, and having thus secured control of the eyeball, turn it inward to any required extent by simply tying the thread (*Fig. 65*).

Valk² describes a new method of *shortening of ocular muscles*, and gives the history of twenty cases.

A *tuck* is taken in the muscle to be shortened by introducing a needle armed with an *O* or *OO* sterilized catgut suture, the muscle being held by forcep; the needle is passed through the tendon close to the sclera and beneath the hook, coming out above, then passing it from within outward through the upper edge of the belly of the muscle at a point as far back as we desire to shorten the muscle. It is now carried across the muscular tissue and is again passed from without inward through the lower edge and comes out below; the needle is then passed back beneath the hook through the lower part of the tendon, and the needle cut off, the hooks being removed, the suture tied. A small



Fig. 65.

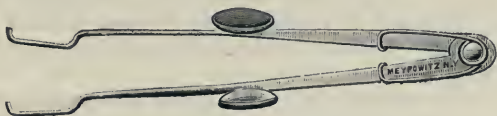


Fig. 66 —Valk's Twin Strabismus Hooks.

knuckle or *tuck* is thus formed at the point of incision. The conjunctival incision is made horizontally, then two strabismus hooks are introduced and the muscle forcibly separated to the desired extent; then a special instrument (see *Fig. 66*), called by Valk *twin strabismus hooks*, is used while the suture is being introduced.

[We have had some interesting results from this method.—ED.]

Williams³ says he makes a marked distinction between giving glasses for *errors of refraction*, and giving glasses for *squint*; his practice is to correct the error of refraction and *operate* for the *strabismus*.

He states that there were many cases of strabismus in which no errors of refraction existed. He further says that the annoyance of having to wear glasses was greater than the annoyance of a simple operation which was sure to be successful.

[Both facts are true, but must be *taken together*, otherwise such teaching is a step backward toward primitive methods.—ED.]

Maxwell⁴ tabulates the result of one hundred and sixty-eight cases of strabismus convergens. The average age at which convergent squint commenced was *three years* and eleven months ; the average of the squint when first seen was eight years, making the age of the patient at the beginning of the treatment nearly twelve.

In an analysis of these cases, it appears that the worse vision or *higher refraction* does not determine the early appearance of a squint. In seven of the ten cases which began after nine years, there had recently developed cataract, nebula or other visual defect, showing that by this age a *latent squint* has little tendency spontaneously to become manifest.

In fifty-one cases the *angle gamma* was taken ; it averaged nearly 2° less in the squinting eye. When the angle gamma was over 3.5° the vision was a little better than $\frac{1}{18}$; where it was less it was only $\frac{1}{24}$. It therefore seems that a *diminution* of the *angle gamma* is associated with internal squint, and that the vision diminishes directly with this angle ; or in other words, a new fixation point is established on a more internal and less sensitive part of the retina ; the angular displacement of this point is very much less than the squint.

The following are some practical suggestions :—

(1.) The angular measurement of squints is to be preferred to all others as being the most accurate. The angle gamma should also be measured, otherwise the exact reduction required cannot be known. With young children who will not sit still at the perimeter, Priestley Smith's tape measurement may succeed.

(2.) The refraction and vision of each eye should be ascertained, and the immediate effect of glasses on the long and prox. angle, and on the vision, should be noted. If there is any doubt about the refraction atropine should be used.

(3.) Where the time can be spared, glasses of full correction should be ordered for constant use for about two months. If the patient cannot relax for distance, atropine should be used till he can.

(4.) If after two months of glasses the squint, including angle gamma, is reduced below 8° , a more extended use of glasses should be tried, and orthoptic exercises employed. But if from 8° to 20° of squint remain, a single tenotomy should be performed with a more or less free division of side attachments. If the result is pretty near the full correction the patient should be seen for a few weeks at frequent intervals. The glasses being taken off or left on for even one day makes a difference in the final result.

When an operation is performed on one who has not previously worn glasses a too small result may be increased by their aid, but a

too great result cannot be remedied. But it is a matter of clinical observation that in a case where glasses have already produced their full effect, they will again, after operation, produce a further reduction. Therefore, the patient who has worn glasses before operation has this advantage, that by continuing to wear them, by having their strength reduced or by stopping them altogether, he can have the operative effect increased or diminished.

Marlow^s points out that the onset of convergent strabismus during the wearing of a *bandage* for injury in childhood, or during any affection which temporarily prevents binocular vision, is not uncommonly observed. A considerable increase in the degree of *heterophoria*, and more especially an increased interval between the induced double images, are often observed when a bandage has been worn for two or more days after a tenotomy which at the time of the operation apparently corrected nearly the whole manifest error. Therefore the annulling of the binocular function by the total exclusion of one eye from vision for a few days would be likely to render manifest any latent heterophoria.

He is also inclined to attribute great importance to the immediate influence of the binocular function in establishing a perfect equilibrium after a tenotomy, while the tendon is more or less completely detached from the eyeball. This function compels the eye to occupy the position in which single vision is possible; and thereby helps to determine the point at which re-attachment of the tendon shall take place. If on the other hand the eye is bandaged it assumes a position of rest; there is no tension or straining of the tendinous fibres induced by the desire for binocular single vision, and the re-attachment may take place at a point by no means the most favourable for that purpose.

REFERENCES.—¹"Med. Press and Circ.," March 10, 1897; ²"New York Med. Journ.," Nov. 7, 1897; ³"Brit. Med. Journ.," Feb. 20, 1897; ⁴*Ibid.*, Sept. 26, 1896; ⁵"Amer. Journ. Med. Sci.," April, 1897.

STRONGYLUS SUBTILIS.

James Cantlie, F.R.C.S.

Dr. Looss,¹ in 1895, reported upon this hitherto unknown worm, but it was only lately that the eggs of the strongylus have been found. These were discovered whilst examining the fecal matter in a case of ankylostoma.

REFERENCE.—¹"Lancet," March 6, 1897.

SUNSTROKE.

Græme M. Hammond, M.D., New York.

Morton¹ speaks highly of the **Ice Treatment** in cases of insolation. Many of the cases had high temperature, the average being 104.5° F.; in others it reached as high as 108.5° F. The treatment consisted in sponging and rubbing with iced water, an iced bath being also used

as a rule and continued for periods varying from a few minutes to an hour, till the temperature had fallen several degrees. A further fall, sometimes with general depression, occurred after this, and was followed in most cases by a second rise. This was ushered in by fibrillar twitchings becoming convulsive, and was also reduced by the ice treatment. Recovery, when it occurred, was rapid. Necropsies in five fatal cases showed, more or less, congestion of the lungs, and, as a rule, of the pia mater, sometimes with ecchymosis and softening of the brain and spinal cord. It was shown that indulgence in alcohol seemed to have exerted a direct and unfavourable influence in predisposing to sunstroke.

REFERENCE.—¹ "Lancet," April 3, 1897.

SYNOVITIS (of Knee Joint).

Priestley Leech, M.D., F.R.C.S.

Dr. O'Connor¹ thinks that in every case of traumatic synovitis which has not yielded to twenty-one days' thorough expectant treatment, the surgeon should open the joint; by so doing permanent thickening of the synovial membrane may be prevented, and many patients saved from having a weak knee for the rest of their lives.

The most absolute cleanliness must be used. An incision one to two inches in length is made parallel to and half an inch to the inner side of the patella; as the structures are divided all bleeding points are secured; when all oozing has ceased the capsule is seized by a pair of dissecting forceps and opened; two pressure forceps are applied, one on either side, to the cut edges of the capsule; external pressure is made with a flat sponge over the synovial pouch, and all the fluid squeezed out; the index finger is next inserted, and if any tags of thickened synovial membrane are found, they are seized with torsion forceps and excised; if any hæmorrhage takes place direct pressure over the bleeding point is made. Three or four sterilized silkworm gut sutures are inserted through the whole depth of the incision, including capsule; they are tied loosely and ample space left for the introduction of a few strands of iodoform gauze into the synovial pouch. **Iodoform** is dusted freely all round, and iodoform gauze and sublimate wool applied above. A McIntyre splint is applied.

The dressings and drain are removed every two days, and if on the seventh day the secretion of synovial fluid has decreased to normal, the edges are united by the silkworm gut sutures already inserted. These are removed on the fourteenth day, and if the union is firm the patient is allowed up on the sixteenth with instructions to daily increase the range of movements.

REFERENCE.—¹ "Annals of Surgery," Nov. 1896.

SYPHILIS (of the Nervous System).*Græme M. Hammond, M.D., New York.*

Hodges' states that the following nervous manifestations are of diagnostic value : (1,) Headaches which disappear if paralysis occurs ; (2,) Insomnia, nearly always associated with headache, and disappearing with the appearance of convulsions or paralysis. It differs from the insomnia of neurasthenia and melancholia in that it occurs in the early night, the victim arising in the early morning ready for his daily labour ; (3,) Vertigo, occurring usually with the headaches. It may be transient, but becomes worse as the disease progresses ; (4,) Tremor, present in one half of the cases. It occurs most often in the order named : In the hands, tongue, and over the whole body, accompanied by headache ; (5,) Hemiplegia ; (6,) Erratic distribution of paralysis, as aphasia, with or without hemiplegia, ptosis, insanity, or epilepsy, with paralysis of one arm or leg ; (7,) The use of electricity to determine central from peripheral lesions ; (8,) The presence of great weakness and mental dulness. This is one of the most valuable of the nervous manifestations, being out of proportion to the seeming condition of the patient ; (9,) The history of the case. In women the history of many abortions would point to syphilis.

REFERENCE.—¹ "Amer. Med. and Surg. Bull.," May 10, 1897.

SYPHILIS OF NOSE. (See "Nose.")

SYPHILIS OF TONGUE. (See "Tongue.")

TACHYCARDIA AND BRADYCARDIA.*P. Watson Williams, M.D. Lond.*

A consideration of tachycardia side by side with bradycardia may serve to simplify the pathological problems involved and render the clinical import of these symptoms more obvious.

I may perhaps recall to the reader's mind that the cardiac movements are controlled by a plexus of nerves practically made up of branches of (1,) The accelerator nerve ; (2,) The inhibitory nerve ; (3,) The depressor nerve of the heart.

The inhibitory fibres are derived from the spinal-accessory nucleus in the region of the calamus scriptorius, they pass out from the medulla by the inner root of the spinal-accessory and thence, joining the vagus nerve, reach the cardiac plexus, being the inferior cardiac nerve.

The augmentor nerve fibres leave the spinal cord by the anterior roots of the second and third dorsal nerves, thence by "rami communicantes" they reach the sympathetic cord, passing up to the first dorsal and lower cervical ganglia from which are given off the

accelerator branches to the heart. This is the katabolic nerve of the heart through which the cardiac energy is set free.

The superior cardiac nerve is the afferent nerve to the vasomotor centre in the medulla, by means of which the vasomotor mechanism and cardiac movements are brought into harmony. It is the so-called depressor nerve of the heart.

The normal pulse rate varies with age from 130 to 140 in the newborn to 70 in adults, the increasing peripheral resistance in the systemic circulation being probably a chief factor in the gradual reduction in pulse rate in the growing body. But in rare instances we observe in healthy adults an apparent persistence of the infantile pulse rate; for instance, the pulse of Sir William Congreve¹ was stated to have been 120 per minute. The converse condition was well exemplified in the person of Napoleon Bonaparte, whose pulse rate was only 40 a minute. Congenital tachycardia in adults is, however, exceedingly rare.

Alterations in the frequency of the cardiac rhythm may be due to pathological conditions affecting:—

(a,) The nuclei of the spinal accessory in the medulla, from which the inhibitory nerve is derived. Irritative lesions will cause a slow pulse rate, destructive lesions, a rapid pulse. Thus bradycardia may arise from irritation in meningitis, or abscess in the region of the bulb, while bulbar paralysis, locomotor ataxia and other degenerative central nervous lesions afford examples of persistent tachycardia from destruction of the inhibitory cardiac centre.

(b,) The inhibitory nerve in its course from the medulla along the vagus in the neck and chest to reach the heart; *e.g.*, intracranial growths, enlarged lymphatic glands in the neck or within the thoracic cavity may cause either tachycardia or bradycardia respectively by irritation or by more complete compression. The classical case of Czermak, who was able to arrest his own heart for a few beats by pressing his vagus against a bony growth from one of his cervical vertebræ, may be cited.

(c,) The accelerator nerve nuclei in the spinal cord. An excellent example of increased pulse frequency due to excitation of these nuclei is seen in cases of spasmodic torticollis with rapid pulse. I have several times observed this and would draw attention to the fact that the sterno-mastoid, trapezius and heart alike derive motor innervation from the spinal portion of the spinal accessory. Various degenerative lesions such as myelitis and ascending paralysis, when involving the spinal origin of the accelerator nerve, induce bradycardia, possibly from uncontrolled action of the vagus

(d,) Irritation or compression of the accelerator nerve within the thoracic cavity. The irritation of the sympathetic by thoracic aneurysm will usually produce other symptoms than simple tachycardia, *e.g.*, localized pallor, mydriasis, etc.

(e,) Various conditions affecting the intra-cardiac ganglia.

(f,) Various conditions affecting the myocardium. A slow pulse may result from occlusion of the coronary arteries. "But retardation in the action of the heart from occlusion of the coronary arteries has been so uniformly observed, as the result of experiment, as to have led to the erroneous belief that most cases of bradycardia depend upon this cause, and the influence of occlusion of the coronary arteries has therefore been exaggerated."²

(g,) In addition to the few examples cited of organic lesions which may result in tachycardia or bradycardia, we frequently have to attribute these abnormal pulse rates to reflex or toxic sources. Either tachycardia or bradycardia may be due to excessive indulgence in tobacco or alcohol, or may be produced by various drugs which affect the nerve centres. Spencer Watson³ reports a case of nasal polypi associated with tachycardia, which disappeared on the removal of the polypi by snare and cautery; and Lainé⁴ a case of paroxysmal tachycardia which he had considered of the "essential" variety, but in which the tachycardia disappeared after the patient had passed a few calculi per urethram.

(h,) Other cases of tachycardia or bradycardia are due to the action of the higher nerve centres. Thus, the effect of a fright is to produce transient bradycardia followed by tachycardia which may persist for a variable period.

Many cases of Graves's disease seem to result directly from the effect of profound shock or grief. Hysteria, epilepsy and neurasthenia furnish examples both of tachycardia and of bradycardia. The oft quoted case of Col. Townshend is an instance of involuntary inhibition of the heart with bradycardia, while Tarchanoff's⁵ student could increase the frequency of his own heart from 70 to 120 beats per minute.

To sum up the causes of tachycardia we may quote from Whittaker's classical article Larcena's classification:—

(1,) Tachycardia in disease of the heart and blood vessels.

Under this head is included the increase in the action of the heart which occurs in over-strain, in hypertrophy of growth, in acute and chronic myocarditis, in acute endocarditis, in valve diseases, in pericarditis, in angina pectoris, acute and chronic aortitis, in arteriosclerosis, and the affection of the heart which occurs in consequence of Bright's disease

(2,) Cases of febrile tachycardia.

(3,) Tachycardia from peripheric compression of one or both trunks of the vagus, and from central compression of the nucleus of the vagus (or rather the bulbar accessory to the vagus—W. W.).

(4,) Tachycardia from organic disease of the nervous system : (a,) Bulbar diseases, bulbar paralysis, softening in the medulla, bulbar meningitis ; (b,) Certain medullary diseases, acute ascending paralysis, acute myelitis, progressive muscular atrophy, disseminated sclerosis, multiple sclerosis of the pyramids without lesion of the anterior horns, tabes dorsalis, syringomyelia ; (c,) Organic disease of the peripheric nerves ; degeneration of the vagus in tabes dorsalis, polyneuritis, beri-beri.

(5,) Tachycardia in general diseases : (a,) Acute diseases, typhoid fever, diphtheria ; (b,) Chronic diseases, tuberculosis, carcinoma, chlorosis, syphilis, chronic malaria, chronic rheumatism of the joints ; (c,) Convalescence and exhaustion.

(6,) Toxic tachycardias : (a,) From alcohol, coffee, and tea ; (b,) From drugs, digitalis and atropin.

(7,) Reflex tachycardias from the brain, heart, lungs, stomach, liver, intestine, uterus, abdomen, bladder, prostate gland, brachial plexus.

(8,) Tachycardia in neurosis, Graves' disease, hysteria, epilepsy, neurasthenia.

To this I would add (9,) Paroxysmal tachycardia, a neurosis of the intracardiac ganglia.

Similarly we may sum up the causes of bradycardia, thus :—

(1,) Bradycardia in certain diseases of the heart. Under this head is included decrease in the rate of the heart beats which results in over-strain of the heart, senile bradycardia from disease of the myocardium and in arterio-sclerosis with occlusion of the coronary arteries.

(2,) Bradycardia from compression of the nucleus of the accelerator nerve in the spinal cord (? spinal portion of the accessory to the vagus), or from peripheric irritation of the vagus, *e.g.*, the case of Czermak.

(3,) Bradycardia from organic disease of the nervous system (a,) Myelitis, cerebro-spinal meningitis, spinal pachy-meningitis, tumours, general paralysis ; (b,) Injuries to the upper portion of the cord, concussion, hæmorrhages ; (c,) Organic disease of the peripheric nerves, peripheral neuritis following diphtheria.

(4,) Bradycardia in general diseases, *e.g.*, following in convalescence after typhoid fever, malarial fever, rheumatism.

(5,) Toxic bradycardias (a,) From tea, tobacco, or lead ; (b,) From

drugs, pilocarpin, muscarin ; (c,) From uræmia, icterus, and other less recognized auto-intoxications by various somatic poisons, in constipation, etc.

(6,) Reflex bradycardias from intestinal irritation.

(7,) Bradycardia in neuroses, hysteria, epilepsy.

(8,) Paroxysmal bradycardia, a neurosis of the intra-cardiac ganglia.

Clinically both tachycardias and bradycardias may be classified as (a,) Transient or habitual ; (b,) Permanent ; (c,) Paroxysmal.

Temporary tachycardia may of course be physiological and due to exercise or exertion, or it may be associated with fever in various infective diseases, or with pathological conditions of the blood : similarly bradycardia may temporarily appear after the subsidence of the fever in malaria, rheumatism, typhoid, etc., when it is probably the result of the preceding over-activity of the heart. These transient cases need not receive further consideration here. It is worthy of note that tachycardias are most frequently due to functional disorders, while habitual or permanent bradycardia is more usually indicative of grave organic lesions.

Paroxysmal Tachycardia.—Simple tachycardias and bradycardias are relatively common, but the paroxysmal variety of tachycardia is a somewhat rare affection, and in its clinical aspects is characteristic and calls for further consideration. I may therefore quote from my recent observations on this subject.⁶

The cases comprised under the term paroxysmal tachycardia form a clinical entity characterized by attacks of great increased frequency of the heart beat, recurring at long or short intervals and of variable duration.

Symptoms.—The attacks supervene without any apparent cause in the majority of cases, though in others they follow on strong emotion or fatigue, or are associated with dyspepsia. The onset is always abrupt and sudden ; the heart-beats do not increase in frequency progressively, but immediately pass from the usual rate to the extreme frequency of tachycardia, attaining a rate of from 150 to as much as 300 per minute.⁷ Curiously enough, it is only rarely that the patients perceive any subjective sense of palpitation, though as a rule they are conscious of the attack from a peculiar sense of tremor and lassitude, with a feeling perhaps of discomfort in the præcordial region, of carotid pulsation or constriction in the throat or chest.

Attacks generally cease as suddenly as they come on, the cessation being accompanied by a feeling of "a violent blow on the nose" (Case 2) ; "a rebound in the whole body" (Ættinger's case⁸) ; "a

sense of impending death, or as if something had burst in the cardiac region" (Bouvet⁹), or a general sense of relief and well-being. The attacks are of variable duration, lasting from a few seconds to some weeks, recurring at intervals of months or years, in most cases, but with much greater frequency in some cases. During the short attacks the physical signs are little marked; the pulse is small, frequent, regular, and of low tension; the carotids pulsate, and the apex impulse is more plainly seen and felt than usual. In the intervals between the attacks, the heart is usually normal in rhythm and function.

But when the attacks persist for many hours or days, signs of cardiac failure supervene. It is unusual, and probably only accidental, for organic disease of the heart to be present in these cases; but in the long attacks the heart becomes considerably dilated and mitral incompetence arises, the liver is enlarged, the jugulars pulsate, and transient albuminuria may supervene.

The two cases I will now refer to are fair types of the mild and aggravated forms:—

CASE 1. *Paroxysmal tachycardia*.—Mr. A. P., aged eighty-one, had suffered from paroxysmal tachycardia from boyhood, and could perfectly well recall attacks as far back as 1843 (fifty-three years). His mother had suffered from similar attacks. His pulse would suddenly rise to 120 or 130 a minute, and as suddenly drop again to 60. In his old age it occurred less frequently than when he was young. He could not give any cause for the attacks, but stated definitely that they were associated with dyspepsia, and he believed that indigestion induced the attacks. During the attack he felt no great discomfort, but it was often accompanied by a "feeling of compression over the root of the nose." The attacks sometimes lasted a few minutes only, sometimes many hours, and they gave rise to a sense of lassitude; but he never felt any active sense of palpitation. The attacks were more liable to come on while he was resting. He had no difficulty or oppression in breathing in an attack. He had found by long experience that a strong nip of brandy was the best thing to cut short an attack, and that if that was not sufficient, "digitalis and brandy together invariably controlled the condition."

CASE 2. *Paroxysmal tachycardia and bradycardia combined*.—Mrs. J. S., aged sixty-two. The patient stated that when about three months old she had inflammation of the lungs, and that she believed that she had never recovered from the effects of that attack. Her first heart-attack came on after a long weary journey from Madeira, about six years before I saw her. The onset was sudden; it lasted ten minutes only, stopping as suddenly as it came. Six or seven months

later she had her second attacks, and then she had attacks about every six months, each lasting a few hours. In 1892 she had attacks, and one lasting as long as seventeen hours, the pulse reaching 200 a minute. Not long after she consulted Sir Douglas Powell for her chest, and she had a heart attack while in his study, when the pulse-rate was 240. From that time her attacks recurred at frequent intervals. The heart was somewhat dilated, the apex-impulse being in the the fifth interspace, one and a half inches outside the nipple line.

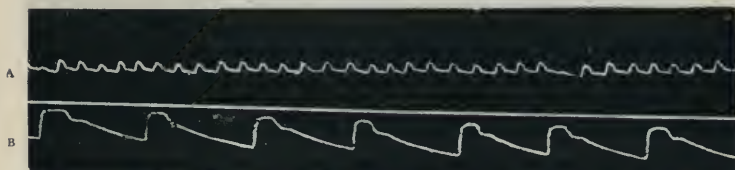


Fig. 67.—(A,) Pulse rate 200 a minute, June, 1892. (B), Tracing June 21, 1892.

The pulse-rate was generally between 44 and 88 a minute, but it often varied from one minute to the next, reaching 50 to 60 a minute, and was often as low as 40.

TABLE OF MORNING AND EVENING PULSE FREQUENCY FOR 19 CONSECUTIVE DAYS : THE TEMPERATURE BEING BELOW NORMAL :—

Pulse	M	44	44	42	44	50	44	40	46	44	46	46	46	56	42	40	54	42	92	88
	E	108	56	180	45	52	45	46	46	56	42	44	42	40	158	42	76	172	108	168

She was a lady of neurotic temperament, but with no evidence of any tendency to hysteria. She said she could generally tell beforehand when an attack was about to come on, but could not describe any definite prodromal symptoms beyond an unusual sense of languor. They came suddenly and left suddenly, often "with a sensation of

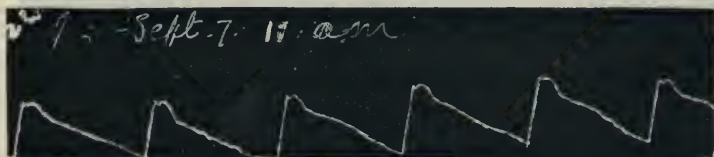


Fig. 68.—Tracing September 7, 1894.

three violent blows on the bridge of the nose." Sometimes an attack would be cut short by a strong dose of whiskey. During an attack she generally felt tired and disinclined for any exertion, but as a rule felt no sense of palpitation. The respiration was not appreciably affected

during an attack. The pulse would often range as high as 200 a minute during the attack.

The following notes and the sphygmographic tracings (*Figs. 67—71*) well illustrate the variations in the pulse rate:—

Aug. 30, 10.30 a.m. .. pulse 160	Aug. 30, 11.15 a.m. .. pulse 112
Aug. 30, 10.45 a.m. .. pulse 156	Aug. 30, 4.15 p.m. .. pulse 44
Aug. 30, 10.55 a.m. .. pulse 156	Aug. 30, 4.30 p.m. .. pulse 198
Aug. 30, 11.0 a.m. .. pulse 104	Aug. 30, 4.32 p.m. .. pulse 204

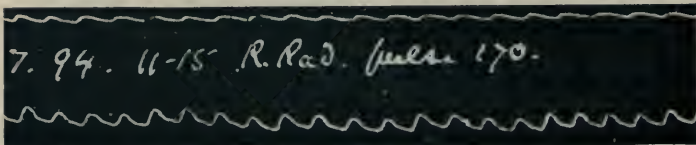


Fig. 69.—Pulse tracings fifteen minutes later.

On January 10, while I was feeling her pulse, which was 60 and fairly strong, it *suddenly* became very feeble and irregular; 120 beats a



Fig. 70.—Tracing of pulse at 60.

minute could be counted with difficulty. Auscultating the heart at once, I found it was beating regularly at 200 a minute. A few minutes

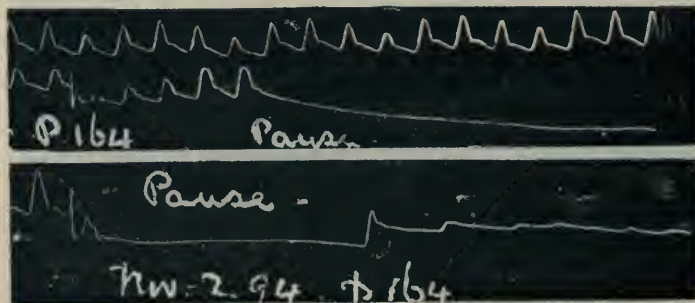


Fig. 71.—Tracings showing periods of asystole during a tachycardiac attack.

later, whilst my finger was on the pulse, it *suddenly* reverted to 60 a minute, becoming at once regular and fairly strong again. The

patient died suddenly one night, when she had been apparently going on as well as usual. The *post mortem* examination showed that the heart was large and flabby, the muscle pale and soft ; it was considerably dilated, and the mitral valve incompetent. The stomach was dilated, but otherwise appeared normal.

The prognosis must always be guarded ; for although patients may be subject to attacks from early childhood and reach a ripe old age, the few *post mortems* recorded show that while there is very frequently nothing abnormal in the condition of the heart beyond obvious dilatation, the tendency of repeated and prolonged attacks is towards cardiac failure.

Pathology.—The theories advanced in explanation of the phenomena are, briefly, that the disease is due : (1,) To excitation to the accelerator nerve of the heart ; (2,) To paralysis of the vagus ; (3,) To disease of the intracardiac ganglia ; (4,) To disease of the myocardium.

Paroxysmal tachycardia is so peculiar in the remarkable similarity of the cases as regards the essential features of the disease, that it is difficult to suppose that they are not all due to the same pathological condition, though the lesion may be induced by various causes. The mere fact that in a small proportion of cases there has existed evidence of organic disease of the heart can scarcely be held to support the view that it is due to diseases of the myocardium. In most cases examined after death the heart has been found dilated ; but while the dilatation and failure of the heart may have caused the death, it would be as illogical to attribute the paroxysmal attacks to dilatation as it is to say that disease of the coronary arteries is the cause of angina pectoris, overlooking the fact that dilatation of heart and disease of the coronary arteries are both very commonly observed *post mortem*, while paroxysmal tachycardia, and even angina pectoris are certainly uncommon in comparison.

Moreover, it is inconceivable that organic disease of the heart should give rise to these paroxysmal attacks from early childhood to old age without declaring itself, and that the attacks should recur at intervals, sometimes of months, sometimes of years, the heart affording no evidence of any abnormality in function in the intervals. I think we may therefore set aside the view that the affection is generally due to disease of the myocardium or pericardium, and assume that the hereditary history of several cases, the neurotic temperament of the majority of patients, the clinical character of the affection, and the usual absence of any organic heart disease points strongly in favour of the very general belief that paroxysmal tachycardia is a functional neurosis.

Cotton's original view was that tachycardia was due to irritation by

abnormal matters in the blood, or to extraordinary sensitiveness of the heart. But the reports of other cases led him to see from the essentially paroxysmal nature of the attacks and their sudden onset and decline that toxic matters in the circulation would not account for paroxysmal tachycardia, although habitual tachycardias might be toxic in origin.

The theory that the affection is the result of paralysis or paresis of the vagus has been advanced by Tuzzek,¹⁰ Nothnagel, and others. Now, Nothnagel believed that the fact that his patient could stop his attacks by a deep inspiration, which would put the terminations of the vagi in the lungs on the stretch, supported his pathological theory. But even if his explanation be correct, and we might cite with greater force the cases where compression of the vagi in the neck (three cases) caused cessation of the attacks, it only showed that by strong stimulation the vagi were able to inhibit the motor ganglia in the heart, and in no way proved that paresis of the vagus had caused the tachycardia. simple pressure in the right ovarian region as well as compression of one vagus, or electrization of the præcordial region, would cause cyanosis and slow the pulse in Brieger's case; while on the other hand, in most cases no amount of pressure or electrical stimulation of the vagus was of the slightest benefit. The vagus has been examined histologically in one case at least (Brieger's case) and found absolutely normal. We have, therefore, to pre-suppose a structurally normal nerve is subject to intermittent paresis; for in many cases the pulse-rate is insufficient for a complete paralysis of the vagi, and yet no amount of stimulation by mechanical means, faradization or drugs, suffices to increase its activity, which is, nevertheless, spontaneously resumed on the abrupt cessation of the attack.

Nor are we left to mere conjecture as to the result of paralysis of the vagus. In several cases of bulbo-spinal disease (bulbar paralysis, tabes), the vago-accessory nuclei have been found atrophied, yet only *persistent* frequency of the pulse has been observed, and the tachycardia has never been either paroxysmal or so rapid as has been observed in paroxysmal tachycardia.

Many cases of division of one vagus nerve by injury or during surgical operations are collected by Roswell Park,¹¹ and he states that from "studying case-histories, however, we come to the conclusion that the equality and frequency of the pulse is practically uninfluenced by pneumogastric division, and that no really serious disturbance has ever been due to such accident." In cases of profound poisoning by atropin the pulse in man may be doubled, atropin paralyzing the terminations of the vagi in the heart. Whittaker remarks that the

investigations of Martius showed that where the influence of the vagus was entirely abstracted from the human heart, the increase in the pulse frequency did not exceed moderate limits, that is, the pulse was not increased to more than 160 beats, although cases of persistent tachycardia may be rightly attributed to a central medullary lesion. I can discover no sound reasons for referring paroxysmal tachycardia to a lesion of the medulla or of the vagus nerve.

There are still stronger grounds for rejecting the view that paroxysmal tachycardia arises from excitation of the augmentor nerve of the heart.

Now, with the inhibitory nerve intact, it is apparently impossible to obtain a greater rate of cardiac beat than 150 by any stimulation of the augmentor nerves, and moreover, "in the mammal when the augmentor fibres are stimulated, some time elapses before the maximum effect is witnessed, and the influence of the sympathetic may last some considerable time after stimulation has ceased"¹²; and, further, not only is the rate of the heart-beat increased, but likewise the force. Thus, even if in paroxysmal tachycardia we conceive that the vagus is paralyzed, or paretic, while the sympathetic cardiac nerves are stimulated, we are still confronted with the clinical fact so constantly observed in paroxysmal tachycardia that the cardiac beats pass abruptly from the normal, or even abnormally slow rate, to the very rapid rate of 180, 200, or even 300, and as abruptly return to the normal.

If the theory I have advanced as to the pathology of Graves's disease¹³ be correct, we have already clinical examples of paresis of the vagus with excitation of the sympathetic.

Another theory is that paroxysmal tachycardia is due to reflex excitement of the augmentor nerve of the heart. It is needless to recite again the discrepancies between the clinical facts of the disease in question and the known physiological phenomena which supervene on reflex excitement of the augmentor nerves, but I would draw attention to recorded cases in which reflex causes of irritation have given rise to tachycardia, an excellent example being furnished by Spencer Watson's case of nasal polypi associated with tachycardia (cited above). Dr. Sansom, he remarks, has met with similar cases, and on seeing this patient at once recognized the probable connection of the cardiac and nasal trouble. But in these cases tachycardia is persistent and the pulse rarely rises above 150; in other words, the reflex tachycardia is sharply differentiated from the paroxysmal.

It only remains to consider the evidence in support of the view that in paroxysmal tachycardia we have to do with some pathological con-

dition of the intracardiac automatic nerve centres. The accelerator and inhibitory nerves normally regulate the cardiac movements by acting upon the intrinsic cardiac ganglia, but though the heart beat is controlled by extrinsic nerve impulses it is initiated spontaneously. The heart beat, then, is initiated by the inherent property of cardiac muscular tissue executing rhythmical contractions when properly nourished by the blood stream, but it is controlled or modified by the accelerator or inhibitory impulses which reach it through the intrinsic cardiac ganglia. But the control which these extrinsic nerves can exercise on the cardiac muscle is very different from that which existed between a motor nerve and its skeletal muscles. Physiological observations tend to prove that it is possible to obtain a much more frequent heart-beat by direct stimulation of the heart than through the branches of the cardiac plexus.

Another noteworthy point in favour of the location of the neurosis in the intracardiac ganglia is the fact, that *cactus grandiflorus* always seemed to aggravate the attacks of my case (No. 2). Now Myers proved experimentally that in dogs, *cactus* or its active principle *cactina* directly stimulated the intracardiac accelerator ganglion, both vagi and sympathetic cardiac nerves being divided, and to such a degree that stimulation of the divided end of the vagus no longer arrested the heart's action.¹⁴

Bearing these physiological data in mind, it is interesting and instructive to consider the clinical antithesis of tachycardia, bradycardia, and we shall find much to support the contention that the intracardiac ganglia are subject to functional disorders which manifest themselves by definite clinical conditions.

Hodgson¹⁵ records a case of bradycardia with asystole in a man, aged forty-four. When the pulse stopped for fifteen seconds, he was faint only; when it ceased for thirty seconds, an epileptiform fit occurred. For six months he was subject to these attacks, varying in number from one a week to a number daily, so great as to be practically uncountable. On one day they occurred every quarter of an hour for ten hours. The average pulse at this time was 21, the slowest recorded pulse being 6.

We may have bradycardia associated with paroxysmal tachycardia, for in my Case 2, as I have already mentioned, the pulse rate, despite very extensive lung trouble, was usually about 44 or 40; and the pulse tracings, *Fig. 71*, show very well the occurrence of prolonged asystole during attacks of tachycardia.

For the reasons I have related above, I think we are warranted in the conclusion that paroxysmal tachycardia and paroxysmal brady-

cardia are due to a neurosis of the intracardiac ganglia, and that although the affection is in many cases the outcome of concurrent pathological conditions affecting the coronary arteries, myocardium or pericardium, it is most frequently a pure neurosis, which, as the result of prolonged or repeated attacks, is itself the cause of dilatation and functional diseases of the heart.

REFERENCES.—¹ Cited by Whittaker, "XXth Century Practice of Med.," p. 404 ; ² Ibid. ; ³ "Brit. Med. Journ.," p. 1097, vol. ii, 1895 ; ⁴ Whittaker, *loc. cit.* ; ⁵ Whittaker, *loc. cit.* ; ⁶ "Bristol Med.-Chir. Journ.," June, 1897 ; ⁷ Bristowe, "Dis. of the Nerv. Sys.," p. 123, 1888 ; ⁸ "Med. Week," ii, 470, 1894 ; ⁹ "Rev. de méd.," ix, 753, 1888 ; ¹⁰ "Deut. Arch. f. Klin. Med.," xxi, 102, 1878, cited by Herringham ; ¹¹ "Ann. of Surg.," xxii, 145, 1895 ; ¹² Lane, Landois and Stirling, "Textbook of Human Physiology," 4th ed., 1891 ; ¹³ "Clin. Journ.," vii, 96, 1895 ; ¹⁴ "Pract.," xlvii, 266, 1891 ; ¹⁵ "Brit. Med. Journ.," vol. i, p. 760, 1891. A very interesting case of paroxysmal tachycardia occurring during convalescence from typhoid fever is recorded by Yarrow, "New York Med. Journ.," Dec. 25, 1897.

TÆNIA MADAGASCARIENSIS.

James Cantlie, F.R.C.S.

Dr. C. Daniel, of George Town, British Guiana, describes an intestinal worm, met with in an Indian male aboriginal, that seems more nearly allied to the worm described by Davine as peculiar to Madagascar than any other. The two are not identical, but hitherto we are not aware that a parasite of the exact form described by Dr. Daniel has been brought before us.

REFERENCE.—"Lancet," Nov. 21, 1896.

TATTOOING EFFACED BY ELECTROLYSIS. *T. Colcott Fox, M.B.*

Heller presented a patient to the Berlin Society of Dermatology in whom he had effaced the marks of tattooing on the hand with **Electrolysis**. He had employed a current of 3 milliampères, and the result was good. He had been obliged to proceed with a certain amount of caution in order to avoid exposing the entire region to electrolysis ; but without local necrosis a cure was not possible. Heller found it necessary to make from fourteen to twenty applications.

Recently, he said, good results had been obtained by washing the tattooed parts with a solution of **Tannic Acid** ; needles were then plunged into the affected region, which was finally touched with **Silver Nitrate** so as to cause the formation of silver tannate *in situ*. Giovanni, in his microscopical examinations, found large vacuoles which were formed by electrolysis in consequence of destruction of the adipose layer. Heller thought that these cavities disappeared again very rapidly.

REFERENCE.—"New York Med. Journ.," Nov. 28, 1896.

THROAT. (See "Trachea.")

TIC DOULOUREUX. *Græme M. Hammond, M.D., New York.*

Ewart¹ cites the following indications for the treatment of this affection: (1,) The sedative; sleep being the first essential and the basis of the entire treatment. It is necessary that the narcotic prescribed shall be sufficiently strong to procure prolonged slumber. **Chloral** and **Morphine** combined will usually prove effectual; (2,) The restorative. This includes mental and bodily rest and suitable alimentation. The object is to raise the nutrition without overloading the blood with nitrogenous waste. A liberal supply of vegetable food and a moderation of the nitrogenous are generally indicated; (3,) The alterative. In genuinely gouty cases this may be directed towards the gout, but with careful avoidance of any depressing agents. The author speaks favourably of the salicylates, benzoates, sulphur, ammonium chloride, and taraxacum, but thinks more highly of a combination of 20 or 30 minims of a solution of **Mercuric Chloride** (1 to 960) and 6 to 10 grains of **Potassium Iodide**. The latter may be used alone, but in sufficient doses, and its action seems to be promoted by the addition of **Tincture of Iodine** in 15 to 30-minim doses; (4,) The tonic. These measures depend mainly upon hygiene and, above all, upon **Muscular Exercise**. Muscular work should be at first passive and only gradually increased. Vegetable tonics may be used with advantage.

Gilles de la Tourette² recognizes two forms of this disease; one, transitory and usually due to cold and peripheral irritations, the other degenerative and perhaps incurable. For the first he recommends **Antipyrin**, **Phenacetin**, and **Hydrobromate** or **Valerianate of Quinine**. For the second he considers **Opium** the only drug that can be relied upon. He gives it in pills, each containing 2 centigrammes of the thebaic extract of the French pharmacopœia made freshly and not too hard. Three a day are given at first, and, the effect being carefully watched, one pill is added every other day until the desired effect is produced. This dose is continued for a few days and is then diminished by one pill every other day.

Dana³ recommends the following plan of treatment: (1,) The hypodermic injection of massive doses of **Strychnine**; (2,) The administration of stimulants such as **Iodide of Potassium**, and of tonics, especially large doses of the tincture of the **Chloride of Iron**, and (3,) **Rest** in bed with light diet and diuretics. The strychnine is given in single daily doses. He begins with the $\frac{3}{16}$ of a grain, and this is slowly increased, until by the fifteenth or twentieth day $\frac{1}{4}$ to $\frac{1}{2}$ grain is given. After reaching the maximum dose the strychnine should be

PLATE XXI



Tongue. Leucoma and warty growth on right; ditto and two growths on left—pre-cancerous stage.

continued for a week or ten days and then gradually reduced. When the initial dose is reached it is discontinued and the patient is placed on iodide of potassium, 5 grains three times a day, gradually increased to 10 grains, and tincture of iron, 5 minims, increased, if possible, to 20 minims, and well diluted. Rest in bed should be rigidly enforced. At the end of four weeks the patient is allowed to go out for two hours daily, and at the end of six weeks can assume his ordinary avocation.

REFERENCES.—¹ "Amer. Journ. Med. Sci.," March, 1897; ² "Brit. Med. Journ.," April 24, 1897; ³ *Ibid.*, Oct. 10, 1897.

TONGUE (Diseases of).

R. Lake, F.R.C.S.

Sclerosis of the tongue, as a rare sequela of influenza, was reported by Courtade,¹ in which the middle third of the tongue was of wooden hardness. This condition followed an attack of influenza in a patient of middle age, spreading to the cheeks, etc. The same authority has reported the occurrence of an atrophied and mammillated condition, also a result of influenza.

Actinomycosis.—This is comparatively a rare primary affection of this organ. A dental abrasion on the side of the organ was the channel of infection. The growth was an indolent, firm, rounded tumour, and resembled a gumma. But the fungi were found. **Iodide of Potassium** is here, as elsewhere, the only remedy.

Tuberculosis.—Tubercular ulcers are ascribed by Hector C. Cameron² to the inoculation of ulcerated surfaces, similar to those observed in pertussis, with tubercle bacilli. These ulcers are almost invariably situated at the tip of the tongue.

Foreign Bodies.—The toleration exhibited by the tongue of foreign bodies is by no means a new fact; but such cases are always of interest. Anderson,³ of Melbourne, reports a case in which a piece of the amber mouth-piece of a pipe remained in the tongue for a month, and Springthorpe⁴ one in which a piece of glass was found in the floor of the mouth four months after the accident.

Syphilis.—Chancres are fairly common in the mouth, especially in France, but the tongue is less frequently affected with any but the tertiary conditions; and the frequency with which it is affected makes up for its comparative immunity in earlier stages. The coloured drawing (*Plate XXI*) depicts a condition usually known as ichthyosis linguæ—plaques, or psoriasis of the tongue—but, as was the case here, these patients are usually men with a history of syphilis, and who irritate the tongue with tobacco or spirits. At times these plaques tend to become more and more warty in appearance, and at the same time become hard. A further stage of this evolution is the

development of genuine epitheliomata. In the drawing these stages are to be seen from the earliest until almost the last.

Sedative or mildly stimulating pigments and sprays are more to be advised than strong washes, at the same time there should be an embargo laid on alcohol, tobacco, and condiments.

As a contrast to this condition, a sketch of a general secondary affection of the palate is shown in *Plate XXII*, in order to emphasize the wide range and variety of conditions seen in buccal syphilis.

REFERENCES.—¹"Arch. Intern. de Laryng.," etc., Feb., 1897; ²"Glas. Med. Journ.," Aug., 1896; ³"Austral. Med. Gaz.," Sept. 21, 1896; ⁴*Ibid.*

TONSILLITIS. (See "Pharynx," also "Quinsy.")

TONSILS (Diseases of). (See "Pharynx.")

TORTICOLLIS.

Græme M. Hammond, M.D., New York.

At the last meeting of the American Neurological Association, Dr. Walton¹ read a paper giving a summary of the present status of this subject. He considers spasmodic torticollis an affection of the cortical centres for rotation of the head. The pathogeny, he thought, was not definitely determined, but gross organic lesion is certainly not present. Eye-strain sometimes plays a part by causing faulty posture (oblique astigmatism, muscular insufficiencies). In one case it followed the wearing of an eyeglass, which increased instead of relieving an oblique strabismus. The course of the disease is progressive. The most common form affects the sterno-mastoid on one side and the posterior rotators on the other; less frequently the spasm is limited to the sterno-mastoid, occasionally to the posterior rotators on both sides, and rarely to the sterno-mastoid and posterior rotators on the same side. He considers that treatment other than a surgical operation is ineffectual in well-established cases. Simple nerve stretching and nerve section are unavailing. The only operations to be considered are resection of nerves and section of muscles. Operations are generally too limited rather than too extensive. In most cases it will be necessary to resect the spinal accessory and the first three posterior branches of the cervical nerves. It will generally be wise to cut also the affected muscles. Absolute cure cannot be expected in more than half the cases, though improvement occurs in a great proportion, and failure in a certain number of cases.

Dercum does not accept the view that all cases are of cortical origin. He believes that many cases, particularly those following in the course of an occupation, are of cortico-spinal origin. He also believes that many cases are benefited by the **Rest Cure**, especially if they are made to lie continuously on a low pillow, are fed by the

PLATE XXII.



Mucous Tubercles of Palate.

nurse, and are not even permitted to leave the bed to void the bladder or bowels. He has seen great benefit derived from the use of the **Tincture of Gelsemium**, first recommended by Weir-Mitchell. He gives it in 15-drop doses three, four and five times a day.

Dana considers there are three different phases which spasmodic torticollis assumes. One is the common form, seen usually in early life, and apt to be associated with neurasthenia and some hysterical manifestations. A second class, somewhat similar but rather more serious, occurs later in life; it commences like facial tic and is a degenerative neurosis. The third, and by far the most serious kind, is one which develops at the choreic age, between twelve and fifteen, and has at first choreic symptoms associated with it. Such cases are progressive and incurable. In the treatment of torticollis it is really only in the first class mentioned that he expects to obtain much improvement. He thinks the lesion is cortical. In one case, which came within the third class already spoken of, death ensued. He found chronic leptomeningitis of the convexity of the brain, with some degeneration of the cells beneath. He believes that thorough **Rest** and **Massage** will give more relief than anything else, particularly if it is begun early in the course of the disease. He has little faith in the efficacy of any drugs.

Mills recommends frequently repeated applications of the **Actual Cautery** two or three scores of times altogether, and the use of the **Iodide** and **Bromide of Potassium**. He also favours **Gelsemium**, and pushes the drug to toxic doses; 15 to 18 drops were administered every three hours towards the end of the treatment, and when the patient was thoroughly poisoned with the drug the movements ceased. He regards these methods of treatment as efficacious as any surgical operations.

Keen does not believe in surgical interference until medical treatment has proved to be useless. Operations performed by himself had not, as a rule, proved beneficial. In some cases relief had followed, but he could not recall more than one or two cures. As a rule, he begins with resection of the spinal accessory nerve.

Gibney recommends partial division of the muscles, stretching the nerves and then rigidly fixing the head and neck in plaster of Paris for two or three months.

J. J. Putnam believes a great deal of benefit may be derived by the methodical education of the muscles or co-ordinating centres. The objection to this method is that it takes many months, and possibly several years, to get a satisfactory result, but during that time the patient is slowly improving.

Langdon reports a case treated by Bastian's method in hysterical contracture. He put the patient to bed, kept him on a milk diet, and gave him sufficient chloral and bromide to stupify him for three weeks. He was entirely cured.

Leszynsky has treated one case successfully by prolonged rest and the administration of tonics, together with local massage, passive movements and educational gymnastics.

Sinkler has cured two cases by the administration of *Conium* pushed to its physiological limit.

The writer, several years ago, called attention to the usefulness of this drug in the treatment of spasmodic muscular disorders. In his experience it has been more serviceable than any other remedy.

REFERENCE.—¹ "Journ. Nerv. and Ment. Dis.," Oct., 1897.

TRACHEA (Defects in the Wall of). *Priestley Leech, M.D., F.R.C.S.*

F. König¹ describes an operation for remedying these defects after tracheotomy. He specially draws attention to cases where symptoms of suffocation arise gradually or at once on leaving out the cannula, and in which these symptoms are directly due to the defect in the tracheal wall.

In the case reported granulations were scraped away from the trachea, and the trachea was dilated by bougies; but it was still impossible to leave out the cannula. A piece of the cartilaginous ring was taken away to remove the stenosis, but the cannula had to be re-introduced ten days after this operation. Eventually when all stenosis had disappeared the question of closing the tracheal fistula arose. A mere closure of the soft parts would have led to a fresh stenosis by the sucking in of the soft parts.

König then devised the following procedure: He raised a flap from the right side of and above the fistula including a portion of the thyroid cartilage which was thus split parallel to its surface. By means of this flap he covered in the tracheal defect, having previously attached to its under surface a small fold raised from the right side of the tracheal fistula. The result was very good.

The defect in the trachea must be closed by some solid material, even in small fistulæ, owing to the suction.

In large fistulæ Schimmelbusch's method by an osteoplastic resection from the sternum must be used.

REFERENCES.—¹ "Berl. klin. Woch.," Dec. 21, 1896, Epit. "Brit. Med. Journ.," Jan. 23, 1897.

TRENDELENBURG POSTURE. *Priestley Leech, M.D., F.R.C.S.*

Keen¹ draws attention to the value of this posture in all operations involving the cavities of the mouth, nose, and trachea.

The patient is placed at an angle of 35 to 45 degrees ; arrangements must be made by means of shoulder braces to prevent his slipping off the table. It is impossible for blood to run uphill, and in any of these operations if the patient is placed in this position the first advantage is that there is little danger of an aspiration pneumonia following the operation. The second advantage is that by these means a preliminary tracheotomy may often be avoided. Thirdly, there is little difficulty in giving the anæsthetic. After the patient is put under an anæsthetic by the Allis inhaler, chloroform is then administered by a good sized pledget of cotton held in ring forceps. Fourthly, the mouth being gagged open if the operation is intra-oral, the interior of its cavity can be seen very readily, especially if with the gag, as in Dr. Mear's mouth-gag there is a tongue depressor to keep the tongue out of the way. If not, the tongue is controlled by a ligature passed through it. The soft palate can be lifted by a blunt hook, and adenoids removed from the vault of the pharynx with the aid of sight as plainly as if they were on the face. The arches of the palate, the tonsils, the posterior wall of the pharynx, the roof of the mouth, the cheek, etc., can always be seen and reached with that certainty which accompanies sight. A forehead electric light is of great assistance. Fifthly, there is no spluttering of blood into the operator's face, and therefore no interruption of the operation. There is little accumulation of blood in the mouth, for if the face is turned a little sideways the blood runs out of the corner of the mouth, and what does not run out can easily be sponged out. In no operation is it of more value than in cleft palate.

A slight Trendelenburg position, say 5 degrees, is of value in certain other operations, especially in removal of the breast, Estlander's, Schede's, or other operations on the chest, and in all operations about the shoulder, head or neck. The blood and solutions do not run towards the waist, and there is no soiling of the night clothes, blankets, etc., and the patient is not chilled by the warm solutions becoming cold.

REFERENCE.—“Annals of Surgery,” July, 1897.

TUBERCULOSIS CUTIS.

T. Colcott Fox, M.B.

Treatment by Koch's Tuberculin R.—The announcement by Koch,¹ after nearly five years' silence, of three new modifications of tuberculin, and of the immunizing and curative properties of the **Tuberculin R.**, and of the marked improvement of lupus vulgaris following injections, at once led many observers to test this remedy. Koch's directions were to begin with a small dose ($\frac{1}{500}$ mg.), to raise the doses as rapidly as possible, taking care not to excite constitutional reaction ;

not to give a second dose until the temperature has fallen to the normal point or near it. The "cure" is completed when the 20 mg. dose is reached. Maragliano² finds that the difference in the reaction produced is chiefly one of dosage, and that if the old tuberculin is given in correspondingly small doses no more bad effects follow its use than with the new product. The therapeutic effects are the same. Bussenius³ tried it in four cases of lupus, in three of which the treatment was completed. He points out that reaction is to be avoided. The object in view is by a gradual increase of the dose, without any considerable local or general reaction, to make the patient rapidly immune against the larger doses. He gave twenty-five injections in one case. Bussenius remarks on the want of uniformity of the action of different supplies, which renders it difficult to formulate rules as to the amount of increase of the dose. He describes the results as encouraging, but no better than other methods in vogue. Wörner⁴ treated four cases of lupus and one of scrofuloderma. A case of lupus considerably improved, in two previously scraped no return occurred, in the scrofuloderma case striking recovery took place. Seeligmann⁵ noted improvement in a tuberculosis of the skin and generative organs. Slawyk commenced in a child with $\frac{1}{4000}$ milligramme. Malcolm Morris and Whitfield⁶ experimented on six cases of lupus and recorded remarkable improvement but no cure. Lassar demonstrated five lupus cases thus treated at the Berlin Dermatological Society. He was favourably impressed, though no cure had resulted. Doutrelepon⁷ treated fifteen cases of lupus, and it may be noted that nearly all had tuberculous glands, and three patients tuberculous bone disease. He also obtained encouraging results, but strongly recommends that the dose be increased more slowly than suggested by Koch. Van Hoorn also obtained marked improvement in a series of cases. These references seem to show that lupus cases are much improved, perhaps more so than by the old tuberculin. The preparations, however, are not of a uniform strength, and undesirable symptoms sometimes occur. One of the greatest drawbacks is the difficulty in obtaining it, and its great price.

The Surgical treatment of Lupus by Excision and Grafting.—Bidwell⁸ says the introduction of the combination of free excision, with immediate skin grafting after Thiersch's method, has made excision available for patches of any size. He gives the following directions: "Great attention to antiseptics is necessary to ensure the success of extensive skin grafting. Both the lupoid patch and the part from which the grafts are to be cut (preferably the front of the thigh)

should, on the day before the operation, be thoroughly disinfected with soap and water, ether, and carbolic acid, and a pack of gauze soaked in 1 in 20 carbolic acid solution should be kept on till the operation.

Under an anæsthetic an incision is made down to the subcutaneous fat all round the lupoid patch about a $\frac{1}{4}$ to $\frac{1}{2}$ inch from its margin. The whole thickness of the skin, together with some of the subcutaneous fat, is dissected off, and bleeding points controlled by pressure forceps and sponge pressure.

The grafts are then cut. For this purpose I employ a special razor with a blade about two inches wide, so that the long ribbon-like grafts may curl up on the razor when cut. The front of the thigh is moistened with a 1 in 4000 solution of mercuric chloride, and, while the skin is held tight by an assistant, long ribbon-like shavings of epidermis from one to four inches in length are cut. They include, besides the epidermis, the rete mucosum and the tips of the papillæ.

The grafts are slid off the razor on to the surface of the wound, and, after their edges have been carefully uncurled, are pushed into position by a probe, care being taken that they overlap the edges of the wound and each other. A piece of gauze protective tissue is then applied, and the antiseptic dressing of double cyanide gauze usually does not require changing for a week, when all the grafts will be found to have taken. The surface from which the grafts have been taken, although painful, heals within a few days without any cicatricial contraction.

The scar left after this operation has very little tendency to contract.

In some of the cases operated on by this method, a very large area of skin has been removed; in one case twenty-five, and in another twenty-one square inches of lupoid tissue were dissected away."

Lang, at Vienna, has carried this treatment out on an extensive scale and Popper describes Lang's results in thirty-four cases. In only three recurrences took place. We note the following points:—

(1.) The parts are thoroughly cleansed, and every care is subsequently taken to prevent infection by the knife or the operators.

(2.) Before operation the line of incision is marked out, $\frac{1}{2}$ to 1 cm. beyond the disease, by means of a sterilized aniline dye.

(3.) Hæmorrhage is carefully arrested before grafts are applied.

(4.) The surface is dressed with simple layers of dry sterile gauze, which are fixed on the skin with collodion, and allowed to remain on four or five days. The second dressing is similar, and for a like duration. Then a dermatol or iodoform ointment is used.

(5,) Certain cases are unsuitable by reason of the implication of the nasal cavity, the multiplicity of the areas or the great extent diseased. Lang, however, deals in two or three sittings at intervals of a few days with very extensive cases.

(6,) In some cases it is not surprising to learn that contraction of the cicatrices necessitated a subsequent plastic operation. For the latter it is well to wait several months until the shrinkage has reached its maximum.

(7,) Popper insists on the excellent character of the cicatrices as a whole, the saving of time compared with other methods, and the rarity of recurrences.

Schulze⁹ considers this treatment the surest and simplest. To obtain a good scar he insists on two points: (1,) The preservation of the layer of fat if possible; (2,) The shaving off of the diseased skin quite parallel with the surface. Cicatricial hypertrophies tend to disappear in a few months. Cases in which the nose is involved tend to recur. Buschke strongly recommends Krause's method.

Injections of Sterilized Streptococci Cultures.—Hallopeau and Roger,¹⁰ struck by the action of erysipelas on lupus, and of streptococci toxins on cancer, have treated seven lupic women with **Injections of Streptococci Cultures** sterilized by the autoclave at 110° C. The injections were made once a week for nine months into the dermis at the site of the lupus patches. They produced an œdematous swelling, but only once fever. In one ulcerated and fumigating case of the nose a cure was nearly complete in seven months, in two cases there was marked amelioration, in four others slight or none. Cultures of bacillus prodigiosus, injected into three patients, produced fever.

Local Injections of Camphorated Naphthol.—Moty¹¹ in about a dozen cases of lupus has injected **Camphorated Naphthol** into the interior of the nodules in proportion to their size, e.g., about a half drop for the largest. He makes three or four injections at each séance. A little black dry eschar follows.

Calomel Injections.—Scarenzio¹² treated three cases of lupus successfully with injections of **Calomel**. The local reaction is apt to be strong. Fournier¹³ communicated the note of a case of lupus treated in vain by all the usual methods, which was cured under the influence of calomel injections. This is the third case of the kind he had met with.

Asselbergs¹⁴ has recently treated fourteen cases of lupus (vulgaris) with remarkable results. The dose used was 5 centigrammes of calomel in 1 c.c. of sterilized olive oil, commencing with one injection

every ten days, but this interval had subsequently to be increased. There were no serious symptoms of mercurialism, but the injections were very painful. P. Gastou and Domenici¹⁵ report the rapid amelioration after an intra-muscular injection of calomel of an extensive ulcer of the foot, probably tuberculous, occurring in a tuberculous subject.

External Applications.—Barbe¹⁶ has tried with encouraging results external applications of **Chlorophenol** as recommended by Elsenberg and others. It has a very penetrating odour and is rather painful for a time. He employed a 20 per cent. solution of mono-chlorophenol in alcohol (called also *chloroline*). This was rubbed in rather energetically with a pad of wadding every two days for several months.

Butte¹⁷ has used daily applications, continued for ten or fifteen minutes, of compresses saturated with a 2 per cent. solution of the **Permanganate of Potassium**. The applications are painful and discolour the skin. Butte says the nodules disappeared, or at any rate flattened down. **Ethyl-diamine Cresol** is spoken of favourably. It is a colourless liquid, nearly non-toxic, with remarkable penetrating power, and greater disinfectant power than cresol. Baer finds 1 in 3000 to 5000 preparation in compresses very healing in lupus of the face, and Neisser has used continuous baths in lupus of the limbs.

The treatment of Post-lupic Atresia.—H. Hallopeau and E. Weil¹⁸ after describing the extreme atresia of the orifices of the face which may result from the cicatrizations following ulcerations of lupus, describe an operation performed by Dentu leading to the re-establishment of a buccal orifice. The operation can only be explained satisfactorily in detail and by the aid of diagrams, but this reference may be useful to surgeons.

Tuberculides.—A great deal of attention has been lately directed to the nature of various nodular and papulo-pustular eruptions (acneiform) which occur sometimes in connection with tuberculous lesions, and sometimes in the absence of any obvious ill-health. The French "Annales of Dermatology and Syphilis" for 1897 contain a number of references to such cases. Some observers insist on the intimate relations of these lesions with tuberculosis, and consider them directly tuberculous or due to toxins. The name *tuberculides* has been proposed for them. The term *scrofulides* is objected to as no longer conveying any definite signification. In this connection we may refer to a remarkable instance of *acute miliary tuberculosis of the skin in a case of generalized acute visceral tuberculosis* recorded by Leichtenstein.¹⁹ Crops of isolated papules, from a poppy seed to a

hemp seed in size, evolved over the face, trunk, and extremities. Many became slightly vesicular or pustular, and underwent spontaneous involution. These lesions contained on section numerous tubercle bacilli.

REFERENCES.—¹“Deut. med. Woch.,” April 1, 1897; ²“Gaz. degli Osped. e delle Clin.,” July 4, 1897; ³“Deut. med. Woch.,” July 8, 1897; ⁴Ibid., July 22, 1897; ⁵*loc. cit.*; ⁶“Brit. Med. Journ.,” July 24, 1897; ⁷“Deut. med. Woch.,” Aug. 19, 1897; ⁸“Ind. Lancet,” Sept. 1, 1896; and also “Treatment,” 1897; ⁹“Cong. of Germ. Phys.,” Sept., 1896; ¹⁰“Presse méd.,” April 8, 1896; ¹¹“Bull. méd. du Nord.,” May 8, 1896; ¹²“Gaz. Med. Lombar.,” April 19, 1897; ¹³“Soc. Franç. de derm. et de syph.,” May 20, 1897; ¹⁴“Soc. méd.-chir. du Brab.,” June 29, 1897; ¹⁵“Ann. de derm. et de syph.,” vol. viii., No. 7, July, 1897, p. 740; ¹⁶Ibid., March, 1897; ¹⁷“Ann. de polyclin. de Paris,” Jan. 1897; ¹⁸“Ann. de derm. et de syph.,” T. viii., No. 5, May, 1897; ¹⁹“Munch. med. Woch.,” No. 1, 1897, p. 1, et seq.

TUBERCULOSIS (Surgical).

Priestley Leech, M.D., F.R.C.S.

M. Caromilas^r has used with success an injection into the foci of suppuration of **Camphor 5, Resorcin 1, Olive Oil 10, Carbon Disulphide 12**. The patient had suppurative osteitis of the pubis, salpingitis and incipient pulmonary disease, and complete recovery took place.

This injection is useful in the majority of cases of inoperable local tuberculosis.

Sclerogenic Treatment of.—Sematzky² has used Lannelongue's method of injecting solutions of **Chloride of Zinc** around the diseased part in tuberculous affections. The presence of pulmonary tuberculosis greatly reduces the chance of this local treatment. A solution of 1 in 10 of chloride of zinc was used, and according to the age of the patient, from 7 to 10 drops were injected in a number of places (from twelve to twenty) around the periphery of the affected area.

Out of twenty cases that have been followed up, ten cases gave highly satisfactory results, in seven fairly good ones, and only in three no results were obtained.

He did not wait as long as three weeks between the injections, as recommended by Lannelongue, but performed a second injection as early as the seventh or even third day after the first injection, if the pains had ceased. An anæsthetic is not necessary in adults, and even children may not need one.

By observing rigid aseptic precautions the appearance of swelling, redness and signs of any inflammatory reaction, as described by Professor Lannelongue, are avoided. Dr. Sematzky employed an immobile dressing immediately after the injection. He thinks besides the sclerosing action the great antiseptic power of the drug has a paralyzing effect on the activity of the bacillus.

TREATMENT.—Boisseau de Rocher³ has for some years treated osseous tuberculosis and chronic osteo-myelitis by **Electrolysis** of a solution of **Sodium Bromide** within the tissues.

The technique consists in injecting the solution into the tissues, the opened abscess cavity or the bone cleared of sequestra, as the case may be, by means of a platinum trochar which forms the anode of a constant current, the kathode being a large moist pad applied in the neighbourhood. The solution is decomposed by the current, bromine, hydro-bromic acid and oxygen compounds being formed, which have a marked antiseptic action.

When the tuberculous disease has not suppurated, 10 drops of a 1 in 20 solution of bromide of sodium suffice ; in the case of a suppurating cavity a 10 per cent. solution is required. In a non-suppurative case the treatment need only be repeated once or twice, at an interval of three weeks ; improvement usually manifests itself in about fifteen days ; in suppurating lesions the treatment must be repeated twice a week. The strength of the current required varies with the amount of fluid injected, but is usually about 25 to 30 milliampères.

The author reports six extremely successful cases treated by him in Duplay's clinic.

In non-suppurating cases no improvement must be expected until the fifteenth day, from which time it is steady and continuous ; a cure usually resulting in about six weeks. Recent disease may only need a single sitting ; old standing affections may require two or three. Suppuration will require treatment twice a week for a longer or shorter time.

Two facts are worthy of note : firstly, the absence of reaction, local or general ; and secondly, the needlessness of immobilization or of compression, simple rest in bed being quite adequate.

Campanini⁴ gives several examples of the results of Durant's method of treatment, viz., the injection of **Iodine** in surgical tuberculosis.

In tuberculous arthritis, in tuberculous glands, especially if unassociated with a suppurative peri-adenitis, and in tuberculous peritonitis, good results were obtained. It was also used in two cases of lupus, and in one of tuberculous orchitis and epididymitis.

Dr. Sandberg,⁵ of Bergen, has treated several cases of surgical tuberculosis with **Tuberculin**, and he comes to the following conclusions : It is a reliable diagnostic agent, but the results he obtained might have been obtained by any other method of treatment. It cannot be proved to possess any curative power in the treatment of tuberculous joint diseases.

Mr. Frederick Eve⁶ gives notes of eight cases of surgical tuberculosis

treated by Koch's new tuberculin (**Tuberculin R**). His impressions are: Some slight, although no markedly favourable influence may be exerted in cases of early tuberculosis of joints, or in those in which no evidence of softening of caseous material exists. But the effect where caseous material has broken down, and especially if the disease has become septic, is negative. The new remedy has some of the drawbacks of the old one—pyrexia and other unpleasant symptoms occur. A noticeable thing is that in Mr. Eve's and Dr. Sandberg's cases two cases of tuberculous epididymitis appear to have been more favourably influenced than cases of joint tuberculosis.

REFERENCES.—¹"Presse méd.," No. 77, p. 488, 1896; ²"Lancet," vol. I, 1896, p. 897; ³Epit. "Brit. Med. Journ.," p. 83, Nov. 21, 1896; ⁴"Il Policlinico," Oct. 1, 1896, quoted in "Brit. Med. Journ.," Dec. 5, 1896; ⁵"Brit. Med. Journ.," Oct. 17, 1896; ⁶"Lancet," p. 704, vol. II, 1897.

TUBERCULOSIS OF LARYNX. (See "Larynx.")

TUBERCULOSIS OF TONSILS. (See "Pharynx.")

TYPHOID FEVER. *G. Lane Mullins, M.A., M.D., Sydney.*

TREATMENT.—J. Murray-Gibbes¹ advocates the use of **Cold Air** in the treatment of typhoid fever. The necessary apparatus is thus described: Small hospitals have usually a steam boiler, probably in connection with a pump. It would only be needful to lay down a small freezing machine, and connect it with the fever ward—which would have to be insulated—by means of pipes, through which chloride of calcium brine circulated, abstracting both moisture and heat from the room, a tap regulating the flow. The machine is simple, and, in addition to the service indicated, it would make ice for the hospital. It could have attachments by flexible tubing for local applications of cold. The advantages claimed for the cold air treatment are: No handling of the patient is necessary, and the shock to nervous patients of being placed in the cold bath is avoided.

REFERENCE.—¹"Aust. Med. Gaz.," April 24, 1897.

W. Gilman Thompson, M.D., New York.

As usual, the literature of enteric fever is voluminous for the year. The **Cold Bathing** treatment (Brand method) is constantly gaining adherents, especially in America, and bacteriologists and clinicians are alike interested in the Widal serum test, and the Hiss method of examination of enteric stools, both tests for early diagnosis. The latter is described by Briggs in the "New York Med. Rec." (Dec. 4, 1897, pp. 826-7).

Frank M. Pope¹ reports four cases treated with antitoxic serum, in two of which an early defervescence ensued. The diagnosis was not confirmed by bacteriological examinations, and the reporter seems to still place faith in the diagnostic value of the Ehrlich or "diaz" urine test.

Concurrent scarlatina and enteric fever are discussed by E. MacDowel Cosgrave,² of Dublin, who adds five interesting cases to the literature.

Pfeiffer and Kolle³ report experiments upon man by inoculation with killed typhoid germ cultures. Shivering, vertigo, and slight elevation of temperature followed. The blood serum of the patients acquired within six days properties similar to those possessed by the serum of convalescents from true typhoid. The reporters hope that the inoculations may prove preventive.

W. Gilman Thompson,⁴ in a paper read at the New York Acad. of Med., warmly advocates the treatment by **Cold Tub Bathing**, from a personal experience based upon over three hundred cases. He discusses the same subject in the Presbyterian Hospital Reports for 1897. The same author considers the disinfection of typhoid excreta in a paper⁵ read at the New York State Med. Soc., on Jan. 28th, 1897.

The following are the conclusions arrived at :—

(1,) The best disinfectants of typhoid urine and stools for practical use are (i,) a 1 in 500 acidulated solution of corrosive sublimate; (ii,) a 1 in 10 crude carbolic acid solution; (iii,) chlorinated lime.

(2,) Owing to the possibility of injury to plumbing, the carbolic acid solution is preferable wherever plumbing is concerned. The lime is best for country use in privies and trenches.

(3,) The disinfectant should be thoroughly mixed with the stool and left in contact with it for fully two hours. Enough of the disinfectant must be added to completely cover the stool with the solution.

(4,) The bed-pan should be kept ready-filled at all times with at least a pint of the disinfectant into which the stool is at once discharged, and should be cleaned with scalding water and one of the disinfecting solutions.

(5,) Rectal thermometers, syringes, tubes and all utensils coming in contact with any of the faecal matter must be disinfected with the corrosive sublimate or carbolic acid solution.

(6,) After each stool the patient's perineum and adjacent parts should be washed and sponged with a 1 in 2000 corrosive sublimate solution.

(7,) Nurses and attendants should be cautioned to wash their own hands thoroughly, and immerse them in a 1 in 1000 corrosive sublimate

solution after handling the bed-pan, thermometer, syringe or patient, or giving sponge or tub baths.

(8,) All linen and bed-clothing used by the patient should be soaked in a 1 in 20 carbolic acid solution, and subsequently boiled for fully two hours.

(9,) Disinfection of the stools should be begun as soon as the diagnosis of enteric fever is established, and should be continued for ten days after the temperature has remained at the normal.

(10,) In localities where a proper drainage system is lacking, the stools should either be mixed with sawdust and cremated, or buried in a trench four feet deep after being covered with chloride of lime.

At the meeting above mentioned, a number of valuable contributions were made to the literature of typhoid fever, all of which will be found in the "Albany Med. Annals" for March and April, 1897. These are: "Life history of the typhoid germ outside the body," by F. C. Curtis; "Relation between contaminated drinking water and typhoid fever," by J. S. Billings, jr.; "Bacterial and allied tests as applied to the diagnosis of typhoid fever," by J. S. Ely; "External and internal use of water in typhoid fever," by Chas. G. Stockton; "Typhoid fever in infancy," by W. P. Northrup.

By far the most interesting work upon typhoid fever of the past year relates to the serum diagnosis. The papers upon this subject are too voluminous for more than bare enumeration in these pages. A discussion of the method, known as the "Widal test," will be found under the heading *Serum Diagnosis* in the article on "Fever." A good summary of the subject is given in an editorial in the "Brit. Med. Journ.," (Feb. 13, 1897). Grünbaum, who claims to have discovered the test simultaneously with Widal, of Paris, describes his method in the "Lancet," (Dec. 10, 1896). R. Stern⁶ draws attention to possible sources of error in the test. W. Gilman Thompson⁷ reports results of the test in five hundred and three cases, in five of the chief hospitals in New York, including a number of diseases other than typhoid, in which a reaction was obtained. Among them were cases of malaria, pneumonia, epidemic spinal meningitis, miliary tuberculosis, etc.

W. C. C. Pakes⁸ gives a tabulated series of cases emphasizing the importance of employing the reaction as a quantitative, and not merely as a qualitative test.

A. Sheridan Delépine and E. J. Sideboth⁹ report the success of the test in twenty-five cases of undoubted typhoid, and its failure, as expected, in ten cases other than typhoid fever.

H. M. Biggs and W. H. Park,¹⁰ of the New York Health Board,

describe methods and results employed by the Health Department in making the test, and exhibit blank forms for recording the cases.

J. W. Brannan and Egbert Le Fevre,¹¹ of New York, report a number of applications of the test in typhoid fever and other diseases, with favourable conclusions as to its value in most cases, although some reactions were obtained where not expected.

Widal's original account of his test will be found in the "Journ. de méd.," (July 25, 1896). An abstract is given in the "Brit. Med. Journ.," (Sept. 26, 1896). See also the "Lancet," (Nov. 14, 1896).

Geo. R. Murray,¹² of Durham, tabulates twenty-four cases of typhoid fever in which the Widal test was present.

Jemma¹³ finds the reaction present in the serum, urine, tears and milk of female typhoid patients. Wyatt, Johnston, and D. D. McTaggart,¹⁴ of Montreal, report positive results of the test in one hundred and twenty-three cases of enteric fever.

Other valuable papers in confirmation of the diagnostic value of the Widal test are by C. A. Elsberg,¹⁵ Chas. F. Stokes,¹⁶ Pughesi¹⁷ E. Bates Block,¹⁸ A. F. MacCallan,¹⁹ Henry M. Bracken,²⁰ of Minneapolis, Chas. L. Greene,²¹ of St. Paul, Haedke,²² of Neisser's clinic, and Pfuhl.²³

R. C. Cabot²⁴ reports one hundred and sixty examinations, seventy-one of which were typhoid, and all but one gave a typical Widal reaction. J. I. Mackensie²⁵ reports eighty-two examinations, sixty-one of which were typhoid; all but four of these reacted. Fraenkel²⁶ found the reaction as late as three months after convalescence.

TREATMENT.—C. E. Skinner,²⁷ of New Haven, discusses the practical treatment of typhoid fever, arguing in favour of a liberal use of **Cathartics**, especially the natural mineral waters. Another writer, who defends the "eliminative" or purgative treatment of typhoid fever, is W. B. Thistle,²⁸ of Toronto. He prescribes **Calomel** in successive $\frac{1}{2}$ -grain or grain doses, followed by $\frac{1}{2}$ -ounce doses of **Magnesium Sulphate** or **Sal Rochelle**; 10-grain doses of **Salol** are also prescribed every three or four hours.

A. E. Wright and Surg.-Maj. J. D. Semple²⁹ have inoculated eighteen patients with **Antityphoid Vaccine**. Local and constitutional symptoms appeared, including tenderness, inflammation of lymphatics, fever, faintness, nausea, insomnia. Subsequently the patient's blood gave reactions with pure cultures of typhoid bacilli resembling those of the Widal serum test (see *Serum Diagnosis* under "Fevers.") The bacteria lose motility, agglutinate, shrink, sink to the bottom, and are permanently devitalized. The reporters conclude from their experiments that the patients have been rendered immune against enteric fever.

Remlinger and Schneider³² confirm the value of Elsner's method of isolating typhoid bacilli in water. By adding potassium iodide to potato gelatin other bacilli than the typhoid and colon varieties are suppressed.

Elmer Lee³¹ treats his patients by **Copious Draughts of Water**, by external sprinkling with cold water, and irrigation of the colon. Hæmorrhages he treats by transfusion and hypodermoclysis.

William Ewart³² argues for a more liberal **Diet**, and recommends adding to the milk ration such foods as eggs, simple jellies, custards, chocolate, etc.

Samuel West³³ attributes the occurrence of many relapses to the too early feeding of the patient with food other than **Milk**. On the other hand, A. G. Barrs³⁴ is much in favour of early feeding, and cites thirty-one cases in support of his views. He gives ordinary mixed diet, minced meat, etc., when the temperature falls to 100°F., without waiting for convalescence to be fully established.

Henshaw,³⁵ of Cambridge, Mass., adds eight more cases to the ninety already reported as treated with thymus extract. No notable results were obtained.

Singer³⁶ describes five cases of pustular eruption, in four of which he obtained typhoid bacilli by incising the pustules.

P. Horton Smith³⁷ adds the results of experiments in seven cases to the important and accumulating evidence of the presence of typhoid bacilli in the urine. His conclusions are : (1,) That bacteriological examination of the urine is of little diagnostic value, as the bacilli are only found late in the disease ; and, (2,) The urine was often, though not in all cases, a serious source of infection.

Klein³⁸ discusses the problem of the duration of life of typhoid bacilli in water, having kept them alive in distilled water for a period of three months.

Kotchorovsky³⁹ treats enteric fever with **Iodine, Castor Oil**, and diffusible antiseptics, given both per os and per rectum, claiming that the treatment instituted before the fifth day always aborts the disease. (It should be remembered that the diagnosis is often obscure before that date, in cases in which slight fever is the only symptom.)

An interesting discussion of the nervous symptoms in typhoid fever appears in the "*Brit. Med. Journ.*" for Feb. 13, 1897, in which the mental enfeeblement is ascribed by Abercrombie to insufficient food, and by others to toxins.

Whipham⁴⁰ gives a summary of treatment of typhoid fever. He is disposed to use but little medicine, except for the treatment of complications.

REFERENCES.—¹ "Brit. Med. Journ.," Jan. 30, 1897; ² *Ibid.*, Jan. 16, 1897; ³ "Deut. med. Woch.," Nov. 12, 1896; ⁴ "Trans. New York Acad. Med.," 1896, and "Amer. Med. and Surg. Bull.," Oct. 31, 1896; ⁵ "Albany Med. Annals," Mar. & April, 1897; ⁶ "Berl. klin. Woch.," Mar. 15, 22, 1897; ⁷ "Med. News," Oct. 29, 1897; ⁸ "Lancet," May 29, 1897; ⁹ *Ibid.*, Dec. 5, 12, 1896; ¹⁰ "Amer. Journ. Med. Sci.," Mar., 1897; ¹¹ "New York Med. Journ.," Mar. 27, 1897, p. 413; ¹² "Lancet," May 29, 1897; ¹³ "Centralbl. f. inn. Med.," Jan. 23, 1897; ¹⁴ "Brit. Med. Journ.," Dec. 5, 1896; ¹⁵ "Med. Rec.," Apr. 10, 1897; ¹⁶ *Ibid.*, Jan. 9, 1897; ¹⁷ "Rif. Med.," Oct. 2, 1896; ¹⁸ "Johns Hopkins Hosp. Bull.," Dec., 1896; ¹⁹ "St. Mary's Hosp. Gaz.," Dec., 1896; ²⁰ "New York Med. Journ.," Apr. 24, 1897; ²¹ "Med. Rec.," Nov. 14, Dec. 5, 1896; ²² "Deut. med. Woch.," Jan. 7, 1897; ²³ "Centralbl. f. Bact.," Jan., 1897; ²⁴ "Boston Med. & Surg. Journ.," Feb. 4, 1897; ²⁵ "Can. Med. Pract.," Dec., 1896; ²⁶ "Deut. med. Woch.," Jan. 14, 1897; ²⁷ "New York Med. Journ.," Oct. 24, 1896; ²⁸ "Med. Rec.," Oct. 17, 1896; ²⁹ "Brit. Med. Journ.," Jan. 30, 1897; ³⁰ "Ann. de l'Inst. Pasteur," Jan. 25, 1897; ³¹ "Therap. Gaz.," April 15, 1897; ³² "Brit. Med. Journ.," May 1, 1897; ³³ *Ibid.*, Jan. 30, 1897; ³⁴ *Ibid.*, Jan. 16, 1897; ³⁵ "Therap. Gaz.," Sept. 15, 1896; ³⁶ "Wien. klin. Woch.," 1896, Nos. 15, 16; ³⁷ "Brit. Med. Journ.," Feb. 18, 1897; ³⁸ "Centralbl. f. Bact.," Nov. 5, 1896; ³⁹ "Med. Week.," 1896, iv, p. 407; ⁴⁰ "Lancet," July 11, 1896.

TYPHOID (Eye Symptoms in). *Wm. Oliver Moore, M.D., New York.*

Bull¹ says in typhoid fever various lesions may occur in the eye, not only during the height of the disease, but also during the period of convalescence. They may be enumerated as follows, in the order of frequency: Conjunctivitis catarrhal; phlyctenular conjunctivitis and keratitis; loss of accommodation and dilatation; retinal hæmorrhages; paralysis of external muscles.

REFERENCE.—¹ "New York Med. Record," vol. li, No. 17.

TYPHOID (Perforating Ulcer). *Priestley Leech, M.D., F.R.C.S.*

SURGICAL TREATMENT.—Finney¹ has a very good article on this subject. He has collected the reports of forty-six cases, and six hitherto unpublished cases, three of which are his own, make up the number to fifty-two. Perforation occurs in the ileum usually within the last two feet in 80 per cent. of the cases; in the large intestine in 12 per cent.; and in the appendix in 5 per cent. It is usually single, but may be multiple. There is no definite relation between perforation and the severity of the attack; the symptoms may be sudden and severe or very mild, and at times even wanting entirely. It occurs more often in men than women (3 to 1), and is very rare in children. A general or localized peritonitis always follows; if the peritonitis is localized, a more favourable termination may be expected. A peri-

tonitis that proves fatal may develop in the course of a typhoid fever without any discoverable perforation of the intestine; recovery therefore from such symptoms is no satisfactory evidence of recovery from perforation. The length of time between the onset of symptoms of perforation and operation varied between two hours and twelve days. Local signs suggesting involvement of the appendix were recorded in thirteen of the cases. The condition of the patients at the time of operation was, as a rule, distinctly unfavourable; in only five cases of the series is it described as fair or favourable. Thirty-three of the cases had marked general septic peritonitis, with the presence of foul pus and exudate in considerable quantity. In thirty of these cases faecal matter was also present. In no case was the large intestine involved. In all there are fifty-two cases, with seventeen recoveries (32·68 per cent.). Excluding doubtful cases we have forty-five cases of which eleven recovered (26·22 per cent.). Drainage was employed in twenty-eight cases by means of either gauze or a tube; seven were tightly closed after cleansing the peritoneal cavity. In eight cases a wrong diagnosis was made. Three were supposed to be appendicitis; in two ileus had been diagnosed; in two the symptoms were thought to be those of intestinal obstruction (cause unknown); one remained undiagnosed at the time of operation.

The most constant and characteristic sign of perforation recorded was sudden, severe, abdominal pain, persisting with increasing intensity for some time. Nausea and vomiting were present in about 50 per cent. of the cases. The earlier the operation is performed after the patient has recovered somewhat from the primary shock and collapse attending the perforation, the more favourable would be the result. If appendix is at all abnormal remove it. Excision of the edges of section, and resection of the portion of the bowel containing the ulcer, with immediate suture, are uncalled for, and needlessly prolong the operation. If condition of intestinal wall is such as to render suture unsafe or impossible, it would be better to pull the perforated loop out of the abdomen and leave it there for subsequent resection and anastomosis. Drainage should always be employed.

In doubtful cases, as an aid to diagnosis, there is the examination of the blood. In typhoid fever there is no leucocytosis, but a great increase of the white corpuscles takes place after perforation; in one case the increase was from 8,300 before to 24,000 after perforation, and in another 3,000 before and 16,400 after perforation. Death in the majority of cases was due to septic absorption from the peritonitis.

The following method of operating has proved most satisfactory in Finney's hands: An oblique incision, as for appendicitis, six

inches in length in the right iliac region. Find the cæcum, and with this as a guide, draw out the coils of ileum through the abdominal wound. Let an assistant wipe, with a gauze sponge wrung out of hot salt solution, the intestine as it is withdrawn, and another assistant keep it covered with warm salt sponges or towels. All the infected intestine should be drawn out of the peritoneal cavity—ileum, jejunum, duodenum, if necessary the whole of the small intestine. Then with large gauze abdominal pads and sponges, wrung out of hot salt solution, carefully and systematically wipe out the peritoneal cavity until macroscopically clean, paying special attention to the pelvic portion. It is not usually necessary to irrigate with salt solution to do this. Next uncover the intestines and irrigate them thoroughly while outside the abdomen with hot salt solution, then begin to replace them in the inverse order from that in which they were withdrawn, being careful to wipe them dry and free them thoroughly from flakes of lymph, faecal matter, etc. The worst coil should be the last replaced, and the sutured portion next the abdominal wound. This should be packed about with strips of bismuth gauze, and a strip introduced into the pelvis if necessary. Then close abdominal wound tightly, except a small opening for the gauze drain to come through. If there is much distension the bowels should be moved early and thoroughly by calomel in broken doses, followed by salts, and if necessary a high turpentine and soap-suds enema. If stimulation is necessary more reliance is to be placed on hypodermics of strychnia, enemata of several ounces of hot black coffee, and the transfusion into the cellular tissues under the breast of a quart or more of normal saline solution than on other remedies.

Surgically speaking there is no contraindication to the operation save a moribund condition of the patient.

Both Finney and Armstrong² say too much reliance must not be placed upon the diminution of liver dulness; if it is absent it is a valuable sign, but perforation may be present and the liver dulness may be present at the same time. Armstrong thinks that unless the patient be moribund operation should be resorted to. Perforations during convalescence offer greater prospects of success.

Watson,³ Panton,⁴ Price,⁵ Lauder Bruton and Bowlby⁶ report cases in which an operation was done.

Monod and Vanverts,⁷ in a very good paper show that the mortality after intervention is less than that of cases treated medically. They think lavage of the abdomen better than wiping out with sponges, etc, as the intestine suffers less damage, and the fluid in

the peritoneum is much better evacuated than by sponges. A list of cases operated on is given.

REFERENCES.—¹"Ann. of Surg.," March, 1897; ²"Brit. Med. Journ.," Dec. 5, 1896; ³"Intern. Journ. of Surg.," July, 1896; ⁴"Ann. of Surg.," Aug., 1897; ⁵"Med. and Surg. Rep. Phil.," Nov. 7, 1896; ⁶Royal Med. and Chir. Soc., Jan. 26, 1897; ⁷"Rev. de chir.," March, 1897.

ULCER OF THE LEG.

Priestley Leech, M.D., F.R.C.S.

Tincture of Aloes and **Unna's Dressing** for ulcer of the leg are both recommended¹ as treatment worthy of consideration.

The former is recommended by Mons. V. Dehaine. It is carried out as follows: The ulcerated surface is carefully cleansed with an antiseptic lotion and then dried with absorbent cotton; if superficial, it is painted over once with the tincture of aloes; if deep, a second painting may be applied after the first has dried. Over the painted surface a piece of impermeable linen is placed, which ensures contact with the alcoholic preparation and prevents the dressing adhering to the crust. The leg is wrapped entirely in aseptic gauze and cotton.

When the skin is diseased apart from the ulcer itself, Unna's dressing is indicated. The procedure is as follows: After prolonged cleansing of the ulcer with hot water and soap, brushing with a piece of rough aseptic linen and disinfection with an antiseptic liquid, the entire region affected with varicose eczema is covered with a thick layer of Lassar's paste; of which the formula is:—

℞ Starch		Vaseline	600 grains
Zinc Oxide	āā 300 grains		

The ulcer is dusted with iodoform, aristol or dermatol, and then covered with cotton. The entire leg is then painted with Unna's paste, which is melted and applied with a brush. The parts that are covered with Lassar's paste must also be coated with Unna's paste, the composition of which is:—

℞ Water		Gelatine	
Glycerine	āā 3 2.5	Zinc Oxide	āā gr. 300

The leg is then bandaged with tarlatan, which has been starched and soaked in hot water; the bandage is drawn somewhat tight in order to make moderate compression. Over this a dry linen bandage is placed. In from two to six days the secretion will pass through the dressing which is then changed. A hot bath softens Unna's paste.

Under this treatment the secretion dries up and the bandages are renewed only once in two weeks; the appearance of pus is the only indication for the renewal of the dressing.

The following powder is recommended² in slow atonic ulcers of the

leg: Finely powdered **Chloride of Sodium** 10 drachms, powdered **Menthol** 1 drachm. Mix thoroughly and use as a dusting powder after washing the surface of the ulcer clean.

Dr. Edlén³ applies the following ointment once a day:—

℞ Carbolic Acid	2 parts	Ichthyol	20 parts
Boric Acid	10 parts	Oil of Citronella	q.s.
Powdered Camphor,	7½ parts	Zinc Oxide, to make	100 parts

REFERENCES.—¹“New York Med. Journ.,” May 20, 1897, quoted from “Gaz. hebdom. de méd. et de Chir.,” Feb. 21, 1897; ²“Journ. de méd. de Paris,” 1896; ³“New York Med. Journ.,” vol. lxiii.

ULCER (Perforating) OF THE FOOT. *Priestley Leech, M.D., F.R.C.S.*

Radical Cure of.—A. Chipault¹ draws attention to the unsatisfactory treatment of this condition; and even amputation, radical as it appears, has usually no lasting result, as ulceration soon appears in the stump. He regards perforating ulcer as simply a surgical symptom of a great number of diseases of the nervous system, and its proper treatment is the **Stretching of the Nerves** which supply the cutaneous area affected by the ulceration, *i.e.*, in the majority of cases the stretching of the plantar nerves.

Chipault has performed this operation seven times since October 1894, and five of the operations have been done more than two years. Five times he stretched both internal and external plantar nerves, once the internal plantar alone, and once the branch to the big toe.

Stretching of the branches of the plantar nerves ought seldom to be done, for the trophic disturbances are not limited to the region supplied by one of these branches, and an operation wound ought not to be made too near a septic wound, such as even a well dressed ulcer is. The points to be selected are the internal plantar beneath the internal malleolus, the musculo-cutaneous above the external malleolus, and the external saphenous at the edge of the tendo-Achillis. Out of the seven cases only one recurred, and two were very bad ulcers.

In order to obtain these results from the first dressing a complete surgical toilet of the ulcer must be done at the same time as the stretching, *viz.*, scraping, removal of necrosed bones and of the edges of the ulcer, so that the circular ulceration is transformed into an oval wound whose edges are brought together by sutures.

REFERENCE.—¹“Gaz. des Hôpitaux,” No. 41, 1897.

ULCUS SERPIGINOSUM VULVÆ.

T. Colcott Fox, M.B.

Freeland Barbour and Norman Walker¹ discuss and give an illustration of an interesting case which has been included under the term “Lupus of the vulvo anal region.” The external genitals, perinæum and anal region, resembled an ulcerated surface covered

with pinkish-red granulations, and with undermined and overhanging borders. The microscope showed that it was neither a rodent ulcer nor tuberculosis. Endothelioma and syphilis were excluded. The authors believe it to correspond with the *ulcus serpiginosum* described by Unna on an experience of three cases. Unna says it is "a form of ulcer commencing in the genital region, and in the course of months or years extending concentrically over the neighbouring regions." He regards it as venereal in origin, but distinct from ordinary soft sore. It appears to attack males as well as females. The authors refer to other recorded cases.

REFERENCE.—¹ "Scottish Med. and Surg. Journ.," July, 1897.

URETERS (Catheterization of).

E. Hurry Fenwick, F.R.C.S.

Catheterization of the Male Ureters under Electric Light.—Since the introduction of the electric cystoscope it has been foreseen that the next important step in the progress of precise urinary surgery would consist in an easy method of catheterizing the male ureters. It was felt that once this manœuvre was rendered practical much of the obscurity in surgical renal disease would disappear, many of the false impressions we still retain about the symptomatology would be effaced, and that the mortality of nephrectomy would assuredly lessen. It is generally allowed that the female ureter is easily entered and traversed by a suitable catheter guided either by the finger (Simon, Pawlik), or by the eye (Newman, Hirst, Kelly, Hamill, Goldschmidt). But the disappointment caused by the failure of Brenner's instrument in 1889 has rendered us sceptical as to the possibility of guiding an instrument into the male ureter under electric light.

This manœuvre is, however, possible, and has been now in active use for two years. Not only is it practicable in most cases, but to the dexterous it is easy. It will probably be easiest to those who have studied the varying positions and aspects of the ureteral mouths under electric light, and to those who have become adepts at guiding fine bougies under electric light into false passages of the strictured male urethra.

Fingers and eyes thus skilled can engage most ureters in a couple of minutes, provided a suitable cystoscopic instrument is employed. I wish, however, before drawing attention to the instrument, to dissent somewhat strongly from the opinion of one surgeon who asserts it can always be performed in the consulting room under cocaine. I admit it may be done when there is little chance of inflammatory reaction (cystitis, pyelitis, suppression) resulting. It will probably do no harm to catheterize ureters in one's room provided the patient has not

reached forty-five, the urine is quite clear, the kidneys healthy, and that no tuberculosis of the urinary tract is present. But under such healthy conditions the procedure is not called for. It will probably be found that those patients who really need ureteral exploration for obscure disease possess kidneys too sensitive to ureteral and urethral shock to permit any risk of subsequent chill being run. The immediate and remote death-rate due to washing out of the bladder, pyelitis or irritable explosive kidneys co-existing, is sufficiently high to discourage any one from washing out that viscus in one's consulting room, or in fact to do so at all, except under the most favourable circumstances of rest and warmth.

If the ureter has to be explored at all, let it be done with care and caution, let the patient be in bed, and remain there quietly for a few hours after the examination.



Fig. 72.—The Nitze Catheterizing Cystoscope.

Several forms of catheterizing male cystoscopes are on the market, but as yet they fall mainly under two patterns—the Nitze and the Casper. As will be seen from the accompanying figures (*Figs. 72 and 73*), both consist in a cystoscope with its usual electric lamp (L), its

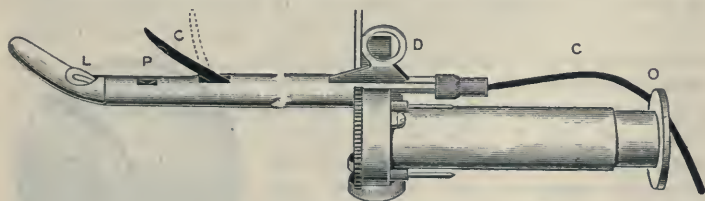


Fig. 73.—The Casper Catheterizing Cystoscope.

prism (P), and its telescope. Attached to one side of the shaft is a channel for the catheter (C) to run in. This is so placed as to allow the eye of the catheter to emerge into the bladder under the eye of the operator. He is thus able to guide it into the mouth of the ureter (*Fig. 74*).

It is difficult to say which instrument will find the greatest favour.

Both are valuable. For my own part I work the Casper without difficulty, and prefer it because the point of the catheter can be so easily manipulated through a large angle by pressing on the ring (D).



Fig. 74.—Engaging the Ureteral orifice with the Nitze pattern.

mouth of the ureter (Fig. 75), and it can now be watched swelling up the wall of the bladder as it passes up the ureter. In a few seconds urine will drop from the end of the catheter and may be collected in a test tube. It is best to give the patient plenty of fluid some time before the examination, in order to excite the renal function. I have for long relied upon half a bottle of Contrexeville water taken an hour before exploration. Cocaine is ample in most instances when the urethra is tolerant and capacious. If an anæsthetic is needed, chloroform is perhaps more suitable as it interferes less with the rapid secretion of the kidney than ether (?).

Rapid Detection of the Site of the Ureter

Mouth afforded by staining the efflux with Aniline drugs.—When the bladder base is much swollen or the ureteral orifices are displaced, or if they are much prolapsed,

This instrument is introduced into the bladder, the catheter lying hidden in its channel. The mouth of the ureter selected is brought into view, and the catheter is pushed through until its point is seen. A little movement of the cystoscope itself, or manipulation of the ring (D) to alter the angle, or a rotation of the catheter, is sufficient to guide the latter into the



Fig. 75.—Catheter from the Casper pattern entering right ureter.

difficulties may arise. A little experience and patience are sufficient to find and engage the mouths. In detecting the mouths of the ureters and distinguishing a thin-edged patulous orifice from a minute hernia, the value of a stain for the urine will be obvious. I have for some years made use of fuchsin, gr. $1\frac{1}{2}$ in pill. This, if taken an hour or so before the examination, will colour the urine a delicate pink, so that after the bladder has been washed out streams of pink urine will be seen to issue from the ureters.

I may be permitted to remark that fuchsin does not affect some kidneys at all, and others which are undoubtedly weak pass a good deal of the colour through. Some years ago I hoped to be able to test the efficiency of the secreting cells by means of fuchsin, but extended experience showed me the test was unreliable.

Sounding the Kidney, Pelvis and Ureter for Stone under Electric Light.—Before the male ureter could be catheterized under the light, I used to have the female ureteral catheter tipped with metal for sounding the female ureter, for the fingers can detect by these means the presence of any small calculus in the channel of the ureter. Sounding the ureter is difficult in the male because of the many bends the catheter has to make, and the metal corners it has to pass. The microphone, perhaps, may render it of real value.

URETERS (Diseases of).

E. Hurry Fenwick, F.R.C.S.

A paper on Catheterism of the Ureters in the Male with the help of the Ureter Cystoscope was read before the section on genito-urinary surgery of the New York Academy of Medicine by Willy Meyer.¹ The author uses the Nitze instrument, and in none of the cases recorded experienced any difficulty in the introduction of the catheter into the ureter. The only difficulty appears to have been caused by the blocking of the catheter occasionally by blood clots or detritus from the kidney. This was readily overcome by withdrawing the catheter from the ureter and injecting boracic solution so as to expel the obstructing plug into the bladder. All the cases were examined under cocaine anæsthesia in the author's consulting room.

The cases cited prove that a microscopically crystalline deposit in the urine can descend from one kidney alone, and thus enter the bladder urine. This struck the author as probably something new. Being unable to find in the current literature any remarks bearing upon it, he wrote to Dr. Howard A. Kelly, of Baltimore, regarding his experience in this respect. In his reply Dr. Kelly states that he has never observed uric acid on one side and not on the other, or any difference in this respect between the two sides. Hitherto it has been generally believed that the increased amount of uric acid (not gravel)

in the urine is excreted by both kidneys. An examination of the cases cited shows that in no case did ureteral catheterism aid materially in clearing up uncertain diagnosis of renal stone, though an excess of crystals on one side over the other certainly added to the presumption.

In cases of pyelitis, whether tubercular or otherwise, ureteral catheterism afforded invaluable evidence as to which side was affected and the condition of the opposite kidney. All the author's cases were directed to take an excess of fluid shortly before the examination. Whether we should advise patients to take a large amount of fluid before examination is still a mooted question in the opinion of the author. In the male he believes it to be a wise plan. In the male one kidney must be drained after the other ; if possible, of course, always at the same sitting. That is to say, we can generally not leave the catheter first introduced into one ureter in place ; liberate it ; catheterize the opposite side, leaving the catheter there also *in situ* ; remove the cystoscope. There will be few urethræ found in the male of sufficiently wide calibre to allow properly moving the cystoscope with the catheter at its side within the urethra. It may often be possible under general narcosis. The latter, however, should, for obvious reasons, be avoided as much as possible in this procedure. We drain the kidneys separately for renal disease. And ether as well as chloroform is detrimental to the renal tissue. So far the author has never used or needed general anæsthesia in his ureteral work.

In the male we are, therefore, limited in the time ; the sooner the patient gets through the better. The more fluid he has taken before the examination, the more rapidly his kidneys will work. Of course, due weight must be given this point in drawing conclusions from the urinary analysis. However, as both kidneys have been subjected to greater work at the same time, mistakes can be avoided by a competent analyst.

In the female the case is different. Both kidneys may be drained for hours, provided we do the work at the patient's home or in the hospital. The urine from each can be collected in proper bottles put into the bed. We can certainly state the fact : Urinary analysis will be more satisfactory without diluting the renal secretion too much by previously ingested fluids. With reference to finding out the amount of work done by each kidney within a given time, the author formerly counted the drops that were discharged through the ureter in a certain number of seconds, and also counted the intervals between the different discharges. He has discarded this method since distinctly seeing jets of urine at the ureteral opening enter the bladder with the ureter catheter *in situ*. The urine evidently often drains alongside

the catheter besides passing through its lumen. The catheters which accompany Nitze's outer cystoscope are of more use in this respect than those of Casper's instrument. The former have an end-hole behind a scoop-shaped lengthening of the material of which the catheter is made, the whole thus forming a sort of bougie. The latter carry the eye at the side. Nevertheless, timing the number of drops discharged through the ureteral catheter is an unreliable observation.

Whether in the female one should make use of a cystoscope constructed on the Nitze plan, or of Kelly's instruments, is really a matter of taste.

In the male we have no choice. As explained above, Kelly's method for catheterism of the ureters is here a technical impossibility. We need instruments which carry the electric light into the bladder, and enable us at the same time to inspect and catheterize the ureteral openings by looking through a telescope and guiding the catheters through a separate channel. With regard to the indication for catheterism of the ureters, it is, in the opinion of the author, our duty to try and separately collect and analyze the secretion of each kidney in the male as well as in the female in all so-called obscure urinary diseases, provided the analysis of the bladder urine points to a renal lesion. It is essential to establish the presence, the health, or disease if possible, also the working power, of the opposite kidney if nephrectomy has to be done.

The author gives the following rules for ureteral catheterism :—

- (1.) Wash and cocainize the bladder according to well-known rules.
- (2.) Fill the bladder with from 5 to 7 ozs. of clear fluid.
- (3.) Introduce the instrument. For this purpose the ureter catheter should be pushed down to the internal opening of the canal of the cystoscope ; the lid of the latter should be pulled out about $\frac{1}{2}$ -inch.
- (4.) As soon as the beak has entered the bladder the catheter should be gently pushed forward into the vesical cavity by about $\frac{1}{2}$ to $\frac{3}{4}$ of an inch, and then the lid should at once be pushed back into place, *i.e.*, it should be fully closed.
- (5.) After the interior of the bladder has been satisfactorily inspected and the ureteral openings have come into view, approach one of them.
- (6.) Let the ureteral opening appear at the very end of the cystoscopic picture, farthest away from the middle of the bladder, but keep it under your direct inspection, with the prism as near to it as possible.
- (7.) Push the catheter gently forward ; if the beak's direction is a proper one, *i.e.*, if it is parallel with that of the lower end of the ureter, the ureteral catheter will almost invariably easily enter the mouth, when conducted by a trained hand.

(8.) Allow the catheter to proceed not more than one or two inches into the ureter, and withdraw the wire mandrel. Then, as a rule, urine will begin to flow drop by drop at intervals or continuously.

By faithfully adhering to these rules, the author has been invariably successful. Of course, the number of patients thus treated is not yet very great. But so far, whenever, whether in male or female, he has been able to see and approach the ureteral opening he has succeeded in introducing the catheter into the same. Mr. Hurry Fenwick can fully endorse the value of this method of catheterizing the male ureters. Practice is of course indispensable to success.

Stricture of Ureter.—Fenger² reports a case of valvular stricture of the ureter operated upon successfully. In cases of hydronephrosis or pyelitis with distention (pyonephrosis) it is not uncommon to find comparatively narrow or thin-walled semilunar valves located transversely in the ureter. These open upward, have the same mechanical action as the valves in veins, and stop the passage of liquid through the ureter on its way from the kidney to the bladder. They are sometimes single and sometimes multiple, two or three in the same ureter. They have been depicted in Rayer's atlas, and are not uncommonly mentioned in the descriptions of specimens in the literature. They cause a gradually increasing impediment to the flow of urine, and effect dilatation of the ureter above and usually near to the valve, so that a ureter with multiple valves will present as many dilatations and constrictions as there are valves. It is natural that if small stones form in the kidney they should be arrested at the valves.

In a case cited in which ureteral stones as well as valvular stricture existed, exploration of the ureter with the sound raised from the kidney pelvis led to the detection of the stricture, a valve, which was excised through a longitudinal opening in the ureter at its seat. Fenger considers this operation preferable to excision of the entire wall of the ureter and invagination after Van Hook's method, as it gives the least possible shortening of the canal. This may be of importance if more valvular strictures have to be operated upon.

REFERENCES.—¹ "Med. Rec.," May, 1897; ² "Amer. Journ. Med. Sci.," Dec., 1896; "Therap. Gaz.," Feb. 15, 1897.

URETHRA (Diseases of).

E. Hurry Fenwick, F.R.C.S.

Anæsthetization of the Deep Urethra.—According to Dr. P. Scharff,¹ the best way of anæsthetizing the deep urethra is by a rectal injection of analgesic solution such as the following :—

R Morphine Hydrochloride	0·3	Distilled Water	grs. 100·0
Atropine Sulphate	0·01		
	M.		

From two to five cubic centimètres of this solution, says the author, injected into the rectum, are enough to induce complete insensibility of the deep urethra, so that sounds may be passed and other instruments used without pain. The anæsthesia is produced in fifteen minutes.

NOTE.--The reader is reminded that **Eucaïne** is apparently an innocuous urethral anæsthetic.

Rupture.—Cabot² reports five cases of rupture of the urethra treated by external urethrotomy and suture. As the result of his experience the author states that in cases of ruptured urethra, immediate perineal section with suture of the urethra should be practised. In all his cases the suture was made with interrupted catgut stitches which were all placed before any of them were tied. Care was taken to include only the cavernous and muscular tissue in the stitches and not to encroach on the mucous membrane. In every case, on tying the stitches, the hæmorrhage immediately stopped. By this procedure, not only is the danger of urinary infiltration and abscess greatly lessened, but also in a large proportion of cases the formation of close intractable strictures may be prevented. In an early operation the search for the posterior end of the urethra is much easier than it is later. The hæmorrhage from the branches of the artery to the bulb serves as a guide to that end of the canal. [The Collator has adopted this principle since 1882, and has followed cases in which stitching the ruptured ends had been adopted. He can endorse Cabot's opinion of the real value of an immediate suture.]

Parasitical cause of Urethral Fistulæ.—Two physicians practising in Alexandria, Egypt, Dr. Trekaki and Dr. von Eichstorff,³ have made what is probably the first serious study of the connection between urethral fistulæ and the trematode known as the *Bilharzia hæmatobia*. They publish condensed histories of seven cases of fistula due chiefly if not entirely to the parasite. In none of the cases was there any stricture or other obstacle to explain the production of the fistula; neither the antecedents of the patients nor the most minute urethral examinations cast any doubt on this statement. There were, however, certain peri-urethral encroachments on the lumen of the canal, which readily yielded before a large sound, and the authors say that the suppuration and bursting of these lesions, due to the irruption of the parasite's ova outside of the natural urinary passages, are occurrences indispensable to the development of the fistulæ.

It seems that the formation of these fistulæ is not uncommon among persons infested with the worms; during the years 1894 and 1895 a hundred and nine patients affected with the parasite were treated in the Deaconesses hospital, of whom forty-three (40 per cent.) had urinary

fistula. Most of the fistulous patients are inhabitants of the Delta of the Nile. The fistulæ are of three kinds : urethro-perineal, urethro-scrotal, and urethro-penile. These fistulæ have not, thus far, been observed in Europeans residing in regions where the parasite abounds, and, indeed, they are rarely affected by it.

In the surgical treatment of these fistulæ there are two cardinal points—to clear away the indurated tissue completely, and to divert the stream of urine, as practised by Mackie and Varenhorst. The patient having been anæsthetized and placed in the lithotomy posture, a large grooved sound is introduced into the urethra. Then the perinæum is incised and all indurated tissue cut away. When the operator has made sure of this he performs perineal urethrotomy. A large drainage-tube is then inserted and the perineal wound is packed with iodoform gauze. This is the procedure generally adopted, and the one that best fulfills the etiological indications.

The authors sum up as follows : (1,) Among the different causes that give rise to urethral fistulæ, the *Bilharzia hæmatobia* should always be taken into account ; (2,) These fistulæ originate in lesions produced by the irruption of the ova of the parasite into the peri-urethral tissues, and the formation around the ova of changes which, under certain definite conditions, give rise to one or more fistulous tracts ; (3,) These fistulæ are in all respects, like urethral fistulæ, due to gonorrhœa or other causes, and are never preceded by urethral stricture ; (4,) They are endemic in Egypt and are observed in 40 per cent. of the fellahs affected with tropical hæmaturia caused by the *Bilharzia hæmatobia*.

REFERENCES.—¹ "Centralblatt f. die Krank. der Harn- u. Sexualorgane," No. 1, 1897 ; "Gaz. hebdom. de med. et de chir.," Mar. 14, 1897 ; "New York Med. Journ.," April 10, 1897 ; ² "Boston Med. and Surg. Journ.," 1896, vol. cxxxv., No. 3 ; ³ "Ann. des organes génito-urin.," Sept. 1896 ; "New York Med. Journ.," Oct. 31, 1896.

URTICARIA.

T. Colcott Fox, M.B.

G. T. Jackson ¹ points out the frequent intractability of chronic urticaria. He agrees that disorders of digestion are the most prominent factors in the etiology. Consequently his first effort is always directed to correcting errors in diet and general hygiene. He has met with success after enforcing a strict diet, the taking of a glass of plain water with each meal, one glass two or three hours after meals, one on rising, and one going to bed, and two hours exercise in the open air without fail. By a strict diet he means this : He cuts off tea, coffee, and rich soups. If milk is digested that is made the principal article of diet for a week or two. All pastries, cakes,

candies, pork, veal, hot griddle cakes, fresh bread, oatmeal, and articles fried in fat are forbidden, as well as articles that experience has taught the patient are difficult of digestion. Three or four articles of food only are to be eaten at each meal. Where general nutrition is low he sometimes orders a nearly exclusively egg diet (raw or lightly cooked), running up to as many as fifteen a day distributed over the day. He thinks very poorly of drugs given for their special effect on the urticaria. Salol and pilocarpine failed. **Salicylate of Sodium** and $1\frac{1}{2}$ grains of **Menthol** in oil of sweet almonds may be useful. Nerve sedatives or tonics, such as arsenic, potassium, bromide, antipyrin, phenacetin, acetanilide, gelsemium, spinal douche or galvanism, he only mentions as recommended, as also belladonna, atropine, and ergot for their effects on the blood vessels; iodide of potassium (Stern), chloride of calcium (Wright) and quinine.

The bowels must be regulated, and tonics may be called for. In many cases a complete change of air and scene is necessary. Local treatment is important. A *tepid* soda, or a vinegar, or sea salt, or extract of witch-hazel bath just before going to bed is useful. On leaving the bath the patient should be dried by wrapping in a large warm sheet, and the skin be then smeared with vaseline and freely powdered by a flour dredger with corn starch. Sprays from an atomizer containing alcohol, eau de cologne and chloroform relieve itching, and amongst many others, lotions of soda, vinegar and carbolic acid.

REFERENCE.—¹ "New York Med. Journ.," July 10, 1897.

UTERUS (Cancer of). *Theophilus Parvin, M.D., Philadelphia.*

Duvrac¹ advises **Sodium Chlorate** internally and locally, as a palliative in cancer of the uterus.

Internally:—

R Chlorate of Sodium	℥v	Distilled Water	℥iij
Syrup of Orange Flower	℥viij		
Mix. Two to eight tablespoonfuls to be taken daily.			

Locally:—

R Chlorate of Sodium,		Iodoform	℥j
Subnitrate of Bismuth	āā ℥ijss		
Mix. A small quantity is applied by a tampon to the cervix.			

Strips six inches wide, and two inches long, of sterilized tarlatan, impregnated with 1 part of **Iodoform**, 20 parts of **Chlorate of Sodium**, and 20 parts of **Glycerine**, may also be used.

If symptoms of iodoform poisoning occur, tampons of salolized cotton, steeped at the time in a 20 per cent. solution of chlorate of sodium, should be substituted. Lastly, a vaginal injection of a quart

of boiled water, holding in solution 150 grains of chlorate of sodium, should be employed daily.

The author claims palliation, not cure, by this treatment, but the former is quite marked.

In many cases² where it is not possible, for various reasons, to operate upon cancer of the uterus, some other means of treatment is necessary, at least in a palliative sense, for the purpose of controlling the hæmorrhages and the fœtor of the discharges. Aside from the use of curetting and the use of tampons of creasote and glycerine or camphorated naphthol, we can employ in addition **Cauterization** with the thermo-cautery, or the cavity of the uterus can be packed every two days with gauze containing **Salol** in such a way as entirely to prevent hæmorrhage. Vaginal injections of **Labarraque's Solution**, a teaspoonful to a quart of hot water, may be given after the removal of the gauze, or this may be supplemented by the following :—

℞ Carbolic Acid	8 grains	Essence of Thyme	3 drachms
Glycerin	8 ounces		

A teaspoonful to 1 or 2 litres of water as an injection.

Or in its place we may use :—

℞ Salicylic Acid	15 grains	Alcohol (90 per cent.)	6 ounces
Ess. of Geran. Ros.	75 „		

A tablespoonful to a litre of water.

In still other cases we may replace these injections by the use of tampons heavily loaded with a powder made up of equal parts of powdered **Benzoin**, **Iodoform**, and **Magnesia**. At the same time that these local measures are resorted to, we should also give tonics, such as wine of cinchona, Fowler's solution, champagne, and other sustaining drinks and foods.

The following is a useful **Medicated Crayon**³ :—

℞ Methylene Blue		Olive Oil	gtt. xv
Tannin	āā cgm. 0.25	Cacao Butter	gm. 4
Powd. Opium	cgm. 0.05		

For one suppository, to be introduced daily into the cervical canal and kept in place by means of a tampon. (See "Endometritis.")

REFERENCES.—¹ "Sem. méd.," July 15, 1896, and "Brit. Med. Journ.," Oct. 31, 1896; ² "Therap. Gaz.," Dec. 15, 1896, and "Journ. des Prat.," July 18, 1896; ³ "Med. Rec.," Jan. 2, 1897.

UTERUS (Fibroids of). *Theophilus Parvin, M.D., Philadelphia.*

Dr. Austin H. Goelet¹ describes the technique of an improved method of ligation of the uterine arteries. The patient is prepared as for a vaginal hysterectomy, careful attention being given to asepsis, and to antisepsis. Anæsthetized, she is placed on the table in an

exaggerated lithotomy position. After exposure of the cervix, a traction ligature is passed through both lips, curetting is followed by washing out the uterine cavity with a 1 per cent. solution of lysol, and it is then packed with iodoform gauze.

The exact manner of exposing the base of the broad ligaments with the uterine arteries will, if the fibroid is of moderate size, and has not caused any displacement of the vessels, be by a lateral incision through the vaginal wall, entering at the utero-vaginal fold. But if the tumour is large, or the arteries not in usual position, I prefer the incision of Ségond as the first step in vaginal hysterectomy, and is thus made. The cervix is drawn down, and a longitudinal incision with the scalpel is made in the mucous membrane on each side of the cervix, beginning near the external os and continued a little to the outer side of the cervico-vaginal fold. These incisions are now joined by another through the mucous membrane behind, and in front of the cervix. The uterus is drawn down by the traction ligature, the mucous membrane being separated by the thumb nail circularly to a little beyond the cervico-vaginal fold. Next, the vaginal wall is opened, after either method is employed, the uterus drawn down and over to the right, so as to put first the left broad ligament on the stretch. The index fingers placed in the anterior angle of the wound, the bladder is carefully separated from the broad ligament, and the ureter is pushed to one side. At the posterior angle of the incision the broad ligament is freed behind in a similar manner, without entering the peritoneal cavity. A traction ligature, inserted in the lateral flap of the vaginal incision, facilitates the subsequent steps of the operation. The broad ligament is now grasped with a pair of clamp forceps close to the side of the uterus and between it and the ureter, which at this point is half an inch or more away from the uterus. A strong catgut or silk ligature is now carried through the tissues of the broad ligament outside of the clamp, from before backward, by an aneurysm needle, and this ligature is tied close to the clamp. The tissues between the clamp and the uterus are then divided with the scissors, and the severed uterine end of the artery is picked up with the pressure clamp and tied. The clamp is removed, the wound irrigated with lysol solution, and the vaginal incision closed by continuous catgut suture. The vaginal incision is dressed with markasol gauze, which is removed after forty-eight hours, and thereafter every twenty-four hours, until union is complete, usually in four to six days. The gauze is removed from the uterus in forty-eight hours, when the cavity is freely irrigated with a 1 per cent. solution of markasol, and the packing is removed or not as required.

Dr. Goelet concludes his paper as follows: While this operation has only a limited application in fibroids of the uterus, it has some advantages which commend it, viz.: (1,) It involves little or no risk when carefully done; (2,) It does not involve a tedious convalescence; (3,) It is quickly and easily performed; (4,) Its immediate result is to afford prompt relief of the symptoms; (5,) Its ultimate result, which is manifest within six months, is complete or almost complete atrophy of the tumour; (6,) It does not unsex, mutilate, or disable the patient.

In Pawlick's clinic² **Electricity** was used in cases in which the tumours were small, or of medium size. There was hæmorrhage in eight cases, pain in two, and pressure-manifestations in three. Of the first eight, the hæmorrhage in all cases was lessened, and in two there was diminution both of the tumour and of the uterus.

The strength of the current was 100 to 200 miliampères. One patient died suddenly four weeks after the last application of electricity, from gangrene of the growth and septic fever.

Chéron³ claims great benefit from the use of **Ichthyol** in painful uterine fibroids, the drug being used as a pomade, or in capsules.

The following ointment is recommended:—

R. Neutral Glycerine	5x Ichthyo-Sulph. of Ammon. 5vj
M. Ft. Ung.	

If this ointment irritates the vagina, the glycerine is lessened to 7 drachms, and the ichthyol to 2 drachms. Every night the ointment is applied, with free massage to the abdominal wall, and in the morning the bowels moved by an injection of warm water.

REFERENCES.—¹“Med. Rec.,” Mar. 6, 1897; ²“Centralbl. f. Gynäkol.,” July 10, 1897; ³“Therap. Gaz.” and “Journ. des Prat.”

UTERUS (Surgery of). (See also “Cervix.”)

Theophilus Parvin, M.D., Philadelphia.

Suppurative Inflammations of Uterus and Appendages.—Dr. William Polk¹ summarizes his paper as follows: (1,) In acute inflammation, with implication of the *cul-de-sac*, incise and drain; (2,) In unilateral suppuration, tuberculous inflammation excepted, treat the uterus and remove the diseased appendages by the vagina—*anterior colpotomy*; (3,) In double suppuration, vaginal hysterectomy with enucleation and removal of the purulent appendages—the so-called *pus sacs*; (4,) In suppurative disease, whether double or single, if the patient is too weak to stand the radical operation, evacuate the pus and drain, reserving the radical operation for the future. Choose the route (vaginal or abdominal) which the pus seems disposed to

select ; (5,) In broad-ligament abscess—a matter to be determined by a vaginal exploratory section, if necessary—evacuate by approaching the pus through the utero-vesical region, or beneath the peritoneum along the route of the round ligament ; (6,) In suppurative disease do not do abdominal section, but, if you should, do not leave the uterus or the cervix.

Vaginal Extirpation of Uterus.—One hundred cases of extirpation of the uterus are recorded by Fehling.² In seventy-three cases the operation was done for malignant disease ; in twenty-one cases for prolapse of the uterus and vagina ; in two for myoma, and in four for chronic metritis and chronic inflammation of the appendages.

The mortality of extirpation has much lessened during the last year of his work, so that in the one hundred cases only two died.

Ventral Fixation of Uterus.—Dr. Edebohls³ asserts that vaginal fixation does not come among legitimate operations in women liable to become pregnant, and that even ventral fixation ought to be limited to the utmost degree in such women. It is not indicated in uncomplicated retroversion of the uterus. Inability of an operator to perform shortening of the round ligaments may be an indication. It is indicated as an adjuvant, in the combined operation for uterine and vaginal prolapse. It is also indicated as a final step in abdominal section if the appendages are removed and the uterus left. Exceptionally it may be done in adherent retroversion, the tubes and ovaries being in normal condition. The operation may be done in uterus unicornis, and in the most aggravated cases of uncomplicated sharp retroflexion.

Retro-displacement of Uterus.—Dr. Edebohls⁴ maintains that shortening the round ligaments is the only operation by which the retro-displaced uterus can be brought into normal and physiologic anteversion. Other operations for this positional disorder depend for success upon more or less extensive, more or less firm, peritoneal adhesions. In capable hands it is as safe, and as successful as the other operations employed for similar purposes, and is free from their dangers in case pregnancy follows.

Adeno-myoma of Round Ligament.—Cullen⁵ relates an important case in the practice of Dr. Kelly. The patient was married and thirty-seven years old. A swelling in the right inguinal region had been observed for eight years. Recently it became the seat of violent cutting pains, which radiated to the back, and were most severe after exertion or at the menstrual period. When examined the tumour occupied the upper part of the right labium. An oval incision was made over it, and it was dissected from the round ligament ; higher

up on that process was a smaller nodule, about two-fifths of an inch long. The round ligament was cut off above the smaller growth, and its stump sutured in the canal, which was closed as in the radical cure for hernia. Recovery was rapid. The larger tumour was a firm nodule measuring over an inch and a third by one inch, and incorporated with a dense mass of subcutaneous fat. It consisted of unstriped muscular fibre, traversed in all directions by tubular bodies identical in appearance with uterine glands. Cullen insists that the excessive pain in the nodule at the menstrual period was significant, suggesting some definite sympathetic relation between the uterus and the nodule.

REFERENCES.—¹"Med. Rec.," June 12, 1897; ²"Centralbl. f. Gyn.," Aug. 21, 1897; ³"Med. Rec.," Oct. 10, 1896; ⁴"Amer. Gyn. and Obst. Journ.," Dec., 1896; ⁵"Brit. Med. Journ.," Oct. 10, 1896, and "Johns Hopkins Hosp. Bull.," May and June, 1896.

VACCINIA IN MAN.

T. Colcott Fox, M.B.

To those desirous of acquiring a comprehensive knowledge of vaccinia, normal and abnormal, and of vaccinial eruption and complications, and all medical men should be armed with the knowledge, we strongly recommend the study of Theodore Acland's article in Clifford Allbutt's "System of Medicine." This article has some most interesting illustrations which greatly enhance its value.

VAGINA (Inflammation of). *Theophilus Parvin, M.D., Philadelphia.*

The following combination¹ is made use of at the Vanderbilt Clinic:—

℞ Pulv. Alum		Acidi Carbolic	3j
Zinci Sulphatis		Aquæ	3vj
Sodii Biboratis	āā 3j		

M. Sig.—A teaspoonful to a quart of lukewarm water as a vaginal injection, twice daily.

The "Journ. de méd. de Paris" gives the following formula:—

℞ Acetanilide	75 grains	Ext. of Hyoscyamus	4 grains
Tannin	8 "	Sugar of Milk	150 "

M. This is for one suppository, to be used for vaginal inflammation.

Carbonic Acid in its nascent state is a new agent in the treatment of blennorrhagic vaginitis, proposed by Piéry, and for which much is claimed.

REFERENCES.—¹"Med. Rec.," Oct. 31, Nov. 7 and 21, 1896

VAGINISMUS.

Theophilus Parvin, M.D., Philadelphia.

Dr. Touvenaint¹ advises the following:—

℞ Stront. Bromid.		Ammon. Bromid.	3j½
Potass. Bromid.	āā 3j½	Aq. Dest.	3viij

M. Sig.—Tablespoonful twice a day.

Locally :—

R	Ext. Krameriaë	gr. jss		Ol. Theobrom.	3j
	Morphin. Hydrochlor.	gr. $\frac{1}{3}$			
Ft. suppos. vaginal.					

REFERENCE.—“ Med. Record,” April 17, 1897.

VARICELLA. (See “ Chicken-Pox.”)

VARIOLA. (See “ Small-Pox.”)

VEINS (Varicose).

Priestley Leech, M.D., F.R.C.S.

Operative Treatment of.—Moore¹ details a method which differs from that practised by Trendelenburg in the following points : (1,) The ligature is placed near the groin above the junction of any of the branches belonging to the lower extremity ; (2,) The incision is made in a transverse direction, the vein is thus more easily found, and the edges of the incision come into apposition more easily ; (3,) Fine silk is used as a ligature, and it is not necessary to use two ligatures and divide between them ; (4,) The dressing—boric acid with a little absorbent wool, kept in place by collodion ; (5,) He allows the patient to go home.

He has treated fifteen cases in the out-patient department, and they have done as well as could be expected. Few surgeons would, however, care to follow this practice.

Barker² has adopted the following method for some time with excellent results : Its chief merit consists in the fact that no foreign body is left in the wound, and much time is saved. Perfect asepsis must be secured. The skin of the leg is first washed, shaved and carbolicized. The saphena vein is exposed as high as possible, preferably at the saphena opening, by a two-inch incision. The vein is then caught above and below by two ordinary Wells forceps, and a piece cut out between them. A sponge is then placed in the wound and the vein is similarly treated lower down in three or four places, *i.e.*, wherever markedly varicose. Dry all the wounds and stop the bleeding with forceps. An ordinary white gauze bandage which has been steeping in 1 in 20 carbolic lotion for forty-eight hours, is applied to the limb in the usual way below the lowest wound, and is wound round until it is about to cross the lowest wound ; the forceps having been removed the edges of the incision are held together with the left thumb and first finger, and the bandage is carried across them. When the fingers are removed the edges will be seen through the transparent bandage to be co-apted very accurately. If this is not the case a probe may be slipped under the bandage and the edges adjusted while the gauze is held taut. The bandage is carried up the limb and

each wound similarly treated. Over the gauze a strip of salicylic wool is laid, which is kept in place by an ordinary bandage.

The dressing is left on until the tenth day, when the wounds will be seen to be closed by a linear scar, and they only require a little wool and collodion for a few days longer. The only point to be specially attended to is the arrest of hæmorrhage from the collateral veins as well as from the main trunk.

Where vomiting may be expected after an anæsthetic a fine ligature may be applied to the upper end of the saphena vein, as the forcing from sickness may break the adhesion produced by the forceps. Such cases are rare and firm bandaging meets them.

Dr. O'Connor³ recommends complete removal of the varicose vein. The limb is shaved and disinfected from Poupart's ligament to the ankle, a two-inch incision is made over the saphenous opening, and the internal saphenous trunk is doubly ligated and divided; if no varicosity is present above the knee the wound is closed and dressed at once with iodoform gauze. If the femoral portion is affected, after ligation at the saphenous opening, the vein is dissected up and its tributaries seized with pressure forceps and tied. If there are varices below, the incision is extended directly downwards over the vessel until the lowest limit of the disease is reached; the vein, after being dissected up as before, is then tied and divided below. An eighteen- or twenty-inch incision is needed. If the external saphenous vein is affected it is treated in the same way.

Dr. O'Connor has employed this method in removing large thrombosed veins occurring in the first few months of pregnancy; in this class of cases above all others it is particularly necessary before manipulating the diseased portion to occlude the main vein well above the seat of disease, so that if thrombi are dislodged they cannot pass into the general circulation. The insertion of a strand of iodoform gauze as a drain to every four inches of the wound is a useful precaution, for it does away with the risk of any blood collections.

Santorecchi⁴ speaks highly of ligature and resection of the internal and external saphenous veins in the treatment of varicose ulcer. Three or four days before operation the ulcer is rendered as aseptic as possible, and then under cocaine a small part of the internal saphenous vein is resected in Scarpa's triangle; if this is not sufficient, part of the external saphena vein is resected in the popliteal space.

REFERENCES.—¹"Internat. Med. Journ. of Australia," July 20, 1896, quoted in "Therap. Gaz.," Jan. 15, 1897; ²"Clin. Journ.," June 16, 1897; ³"Annals of Surg.," p. 526, April 1897; ⁴"Atti d. Accad. Med. Chir. di Perugia," quoted in "Brit. Med. Journ." Erit., June 26, 1897.

VISION (Defects of). *William Oliver Moore, M.D., New York.*

Astigmatism.—Carhart¹ examined the eyes of one thousand school children, with particular reference to *astigmatism*, the Javal ophthalmometer being used.

The age of the children varied between five and eighteen years. Ten pathological changes were noted. Astigmatism existed in 48.5 per cent. of the children, hypermetropic (44 per cent.) and myopic (3.5 per cent.). Astigmatism greatly outnumbered the cases of either hypermetropia or myopia.

The *low degrees* of astigmatism were much more usual than the higher (34.4 per cent. as compared with 10.3 per cent. for moderate, and 3.8 per cent. for high degrees).

Carhart concludes that changes in refraction in childhood and adolescence are due to *slow distension* of the eyeball, either by ocular strain in the healthy eye or by ordinary physiological use of an eye weakened by disease; that such distension is accompanied by change in the *corneal curve*; that many cases of *hypermetropia*, and all of the *myopic and mixed* astigmatism, are thus explained; and that consequently early correction of the refractive error, and especially of the astigmatic element, is of great preventive value.

The undeveloped hypermetropic eye of childhood undergoes a slow distension progressing towards myopia. In such cases *emmetropia*, which is found from nine to twelve years of age, is merely a stage on the road which leads to *myopia*.

Eye Strain.—Clarke² states that blepharitis, phlyctenular conjunctivitis, phlyctenular keratitis have a marked association with ametropia. Recurrent iritis, scleritis and glaucoma he has seen relieved by correcting the ametropia. Further, he states, that there is a distinct association between *astigmatism and cataract*.

Myopia.—Morton,³ in a *résumé* of this subject, says that as early as 1858 Mooren proposed to treat these cases by *removal of the lens*, but that it was opposed by Donders and von Graefe. In 1890 Fukala published a paper on the subject, and since then various surgeons have performed extraction of the lens for this condition. One of the strongest objections urged against the operation is the subsequent *detachment of the retina* noticed. This happens so frequently in high degrees of myopia that its occurrence is *post* not *propter hoc*.

Vacher even maintains that removal of the lens tends to prevent detachment. Generally speaking eyes with less than 11 D, or 12 D, are not suitable, while the highest degree recorded one of Schweigger's had 33 D. At first only young patients were operated upon, but more recently older patients, several over sixty-five years of age. Visual

acuity in the majority of published cases has been considerably increased, with also an increase in the range of vision for reading and other near work. The reason of this improvement is the *increased size* of the retinal image being about twice as large (Fukala). The central part of the retina receives also more rays of light, and is better illuminated ; there is also less dispersion.

Eye Symptoms in Hereditary Ataxia.—Barr⁴ reports four cases of Friedreich's ataxia in one family. The diagnosis was based on the *ataxia*, the absence of knee jerk, the characteristic speech, the entire absence of sensory symptoms, and the presence of nystagmus ; there was also marked *chin jerk*.

The diagnosis is greatly facilitated by the *examination of the eyes*, as one can decide in any given case of juvenile ataxia whether it is *Friedreich's ataxia*, or the family form of *cerebellar ataxia*, or the very rare *locomotor ataxia* in early life, or *cerebellar tumour*. In Friedreich's ataxia, the most frequent symptom is *nystagmus*, which may begin at the same time as the speech disturbance or later. It is horizontal generally, and ceases when the eye is at rest. Marked optic nerve atrophy never occurs.

In the cerebellar type of hereditary ataxia nystagmus is very marked, and optic nerve atrophy very common ; pupillary reflex may be absent.

Effect of Wearing Veils on Eyesight.—Wood⁵ concludes as follows : That every description of veil affects more or less the ability to see distinctly, in the distance and near at hand. The most objectionable kind is the dotted veil ; in undotted and non-figured veils vision is interfered with in direct proportion to the number of meshes per square inch. Veils made of double threads produce more eye strain than when they are made of single threads. The least objectionable veil is that without dots, sprays, or other figures, but with large regular meshes, made with compact threads. In those having weakened sight, veils are a decided menace, giving rise to headache and painful vision. A healthy eye rarely is affected unless the mesh is very much spotted.

Eye Strain and Epilepsy.—Kirkendall⁶ says he is a firm believer in the idea that peripheral irritations cause many of our nervous troubles, and that eye strain is the most prominent. He reports four cases of epilepsy (?). One of these is reported as well ; one passed from under observation ; one died of cerebral embolism ; and one never had convulsions until hit upon the head, when for a few months he had convulsions ; during this time glasses were prescribed, and to their use the amelioration of the symptoms is ascribed.

[It is interesting to note in this last case that previous to the

injury this same patient was directed to wear glasses, which he failed to do. The error of refraction is therefore given by Kirkendall as the cause of the epilepsy; to our mind the *blow on the head was the cause*. We have yet to see a true case of *grand mal* cured by the relief of eye strain.—ED.]

Toxic Amblyopias, Differential Diagnosis.—De Schweinitz⁷ tabulates as follows:—

TOXIC AMBLYOPIA.

(Intoxication-Amblyopia.)

History of abuse of alcohol or tobacco; more frequent in males; uncommon before thirty-five years.

Visual acuity varies from $\frac{5}{200}$ to $\frac{20}{20}$.

Scotoma of oval shape stretching from fixation outward, usually not passing to nasal side; generally for colours only (relative), and, if for white, having the general shape described.

Peripheral visual field intact.

Ophthalmoscopic appearances negative, or a quadrant-shaped atrophy of lower and outer (temporal) portion of disc.

General symptoms not characteristic, if present at all; no other eye symptoms.

Slow in onset; usually promptly amenable to treatment.

NON-TOXIC RETRO-BULBAR AXIAL NEURITIS.

History—chilling of body, great exertion, suppression of menses; rheumatism, infectious diseases, etc. No special relation to sex or age.

Visual acuity greatly disturbed; often complete blindness.

Absolute and often positive scotoma, except in beginning, tending to pass to nasal side of fixation, and not specially horizontally oval in shape.

Peripheral contraction of field for colours and form.

Generally some woolliness of disc, distension of veins; rarely ischæmia of vessels.

General symptoms absent, except such as are likely to be present from probable cause.

Often rapid in onset; frequently slow in responding to treatment.

DISSEMINATED SCLEROSIS.

LOCOMOTOR ATAXIA.

SCOTOMATOUS ATROPHY OF OPTIC DISC.

History of exposure to cold, mental distress, overwork, acute diseases, injury to central nervous system, or specific febrile disease; no special relation to sexes; usually appears between twenty and thirty-five years; sometimes in childhood.

History of syphilis common; occasional history of injury; also exhaustion; uncommon in women. Half the cases between thirty and forty years.

Hereditary tendency; history of exhaustion and lack of sleep; usually appears in males before thirty-fourth year.

DISSEMINATED SCLEROSIS.	LOCOMOTOR ATAXIA.	SCOTOMATOUS ATROPHY OF OPTIC DISC.
Visual acuity varies with stage of disorder.	Varies with condition of optic nerve.	Marked depreciation of central acuity.
Central scotoma analogous to toxic variety.	Scotoma at first similar to toxic variety, but progressive.	Scotoma like toxic variety in form, but absolute.
Concentric contraction of visual field; sometimes retention of peripheral borders.	Contraction of the field for colours and form, especially peripheral re-entering angles; often restriction of the temporal half of field.	Often marked contraction of field, especially in hereditary optic-nerve atrophy.
(a.) General atrophic pallor of disc; (b.) incomplete discolouration; (c.) Temporal atrophy; (d.) Slight neuritis (Uhthoff).	General atrophic pallor (gray degeneration); in the early stages greyiness of the deeper layers of the disc and undue broadening of scleral ring.	Appearance of optic-nerve atrophy, sometimes slight neuritis.
Characteristic tremor; staccato speech, etc.; nystagmus exceedingly common.	K. J. absent; ataxia; lightning pains, etc.; often reflex pupillary immobility and diplopia.	No special general symptoms.
Very imperfect results from treatment.	Optic-nerve change usually progressive.	Scotoma stationary, but unaffected by treatment.

Asthenopia and Nasal Obstruction.—Maxwell⁸ has observed many patients with chronic aural catarrh who suffered from *asthenopia*, and who were relieved of the asthenopia by *nasal treatment* given with a view of benefit to the aural disease. He found that asthenopes who frequently or habitually breathe through the mouth are more likely to be benefited by nasal treatment than are those in whom the nasal mucous membrane is quite as abnormal, but who can breathe freely through the nose. The most usual causes of nasal obstruction, in this connection, are *adenoids* in the naso-pharynx, and *enlarged turbinals*. The former should be removed and the latter reduced by local treatment. Many of these cases would be relieved by glasses; but some get no benefit from any glass until the nose is cured.

Roosa⁹ says *asthenopia* is a forerunner of *neurasthenia*.

Atrophy of Optic Nerve.—Sallard,¹⁰ in speaking of the *deep injections* of **Antipyrin**, as suggested by Valude, says he prefers the hypodermic injections of **Strychnia Sulphate**. He cites the results of ten cases treated by Doffrois, who injected the antipyrin under the muscles of the back, using a 50 per cent. solution, 20 grammes at a dose; these

were kept up for five months without any bad effect. In only *three* was there any *amelioration*, and in none any change in the *visual field*.

Blindness from Sphenoidal Disease.—Holmes¹¹ reports a case in which unrecognized empyema of the left sphenoidal sinus caused intense headache and total loss of vision in the left eye.

The cavity was opened by a drill, through the anterior nares, when all pain of the eye and head disappeared twelve hours after the operation; perception of light returned, also ability to tell time by the watch. The openings closing on two occasions, headache and impairment of vision occurred, which promptly disappeared when drainage was re-established.

REFERENCES.—¹"New York Med. Journ.," April 17, 1897; ²"Amer. Journ. Med. Sci.," Nov. 1896; ³"Practitioner," Feb. 1897; ⁴"Ann. of Ophth.," Jan. 1897; ⁵"Quart. Med. Journ.," April, 1897; ⁶"New York Med. Journ.," April 17, 1897; ⁷"Toxic Amblyopias" Prize Essay, 1896, Philadel.; also "Quart. Med. Journ.," Oct. 1896; ⁸"Amer. Journ. Med. Sci.," Feb. 1897; ⁹"Manhattan Eye and Ear Hosp. Repts.," 1897, New York; ¹⁰"Rev. de thérap.," Sept. 15, 1896; ¹¹"Arch. of Ophth.," vol. xiv, p. 460.

VULVA (Pruritus of).

Theophilus Parvin, M.D., Philadelphia.

Weak **Sulphur Baths**¹ (which should contain 5 to 10 drachms of sulphite of sodium and from 1 to 2 ounces of bicarbonate of sodium, with a quart of mucilage made from linseed) may be employed in chronic cases. **Lotions or Injections of Corrosive Sublimate** in the strength of 1 to a 1000, or of **Carbolic Acid** 1 to 200, or of **Borax** 300 parts to 1000, or of **Nitrate of Silver or Lime**, may be employed. If the case is one of diabetic pruritus, the borax lotion should be used after each act of micturition. If the pruritus depends upon metritis or uterine cancer, vaginal tampons soaked in **Boroglyceride** are often very useful. As a nervous sedative the following powder may be used locally to allay irritation:—

℞ Neut. Glycerine of Starch ʒvj	Calomel	grs. v
Subnitrate of Bismuth grs. xv	Powdered Belladonna	grs. ij
Bromide of Potass. grs. xv		

Or, after local bath, apply:—

℞ Ex. Cannabis Ind. 2 parts	Pot. Bromid.	10 parts
Pulv. Zinci Oxid. 6 „	Glycerite of Starch	30 „

The following vaginal injections may also be employed in some cases with advantage:—

℞ Inf. of Marshmallow 1 quart	Borax	2½ drachms
Cherry-Laurel Water 1 ounce		

Or the following ointment :—

℞ Chloroform	45 minims	Vaseline	1 ounce
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Heidenhain² applies each night, after a disinfecting vaginal injection, compresses wet with a hot solution of tannic acid (tablespoonful to the quart).

Labusquiére³ recommends the alternatives of very hot (105° to 120°), or very cold (40°) lotions, combined with **Antiseptic Applications**. Carbolic acid may be applied in the following manner :—

℞ Carbolic Acid	20 parts	Alcohol	25 parts
Glycerine	75 „	Distilled Water	300 „

Of this solution, 1 to 4 tablespoonfuls (which contains $\frac{1}{20}$ of carbolic acid) are to be mixed with a tumblerful of hot water, and the parts bathed in the lotion. Corrosive sublimate is also useful.

℞ Corrosive Sublimate	2 parts	Rose Water	40 parts
Alcohol	10 „	Distilled Water	450 „

This solution (which contains 1 in 250 of corrosive sublimate) is to be applied undiluted, in the following manner, night and morning : The parts are to be first bathed in tepid water and carefully dried ; a small sponge is then soaked in the lotion and passed rapidly over the affected parts so as to thoroughly moisten the surface. This almost always causes a good deal of smarting and burning, which may be relieved by bathing afresh in tepid water. The first application is much more painful than the succeeding ones, and often a rapid cure ensues.

Ruge⁴ washes, soaps, and then disinfects with sublimate solution the vulva, vagina and cervix till all pathogenic micro-organisms have been removed ; he then applies to the vulva an ointment of **Carbolated Vaseline** (3 to 4 per cent.).

REFERENCES.—¹“Journ. de méd. de Paris,” June 30, 1896 ; ²“Med. Rec.,” March 20, 1897 ; ³“Annal. de gyn. et d'obst.,” Jan., 1897 ; ⁴“Zeit. f. Geb. u. Gyn.,” Bd. xxxiv.

VULVA (Vegetations of). *Theophilus Parvin, M.D., Philadelphia.*

Dr. Lufaud¹ uses for small vegetations the following formula :—

℞ Powdered Savine	Corrosive Sublimate	1 part
Desiccated Alum āā 25 parts		
M.		

A more active application is the following :—

℞ Powdered Savine	Salicylic Acid	āā equal parts
Iodoform		
M.		

Mercier's preparation² of **Salicylic Acid** for this condition is :—

℞ Salic. Acid, from 30 to 38 grs.	Flexible Collodion	75 grs.
M.		

A few drops are to be applied to eight or ten of the warts at a sitting. On the following day eight or ten more may be treated, and a fresh application made to the first ones, and so on till they are all cured.

REFERENCES.—¹"New York Med. Journ.," Oct. 10, 1896; ²"Tribune méd.," Sept. 30, 1896.

WIDAL TEST. (See *Serum Diagnosis*, under "Fevers.")

WOUNDS OF THE AIR PASSAGES.

Priestley Leech, M.D., F.R.C.S.

Mr. Platt¹ records several cases of cut throat treated by immediate suture of the air passages where these were wounded. Henry Morris and Pollard have both advocated this treatment.

The following account contains what he considers the best method of dealing with this class of injuries : If the condition of the patient permit he should be placed under the influence of an anæsthetic, the wound carefully cleaned, and the opening into the air-passages closed by sutures. If the shock be extreme he will rally in a few hours, or if much blood has been lost saline transfusion may be done. The best anæsthetic is chloroform. The wound should be cleansed with antiseptic lotion. The trachea should be completely closed, full curved needles in a holder being used, and all the sutures introduced before any are tied. If it is necessary to use a tracheotomy tube it should be introduced into a fresh vertical cut below the suicidal wound and not through the wound itself ; in many cases a tube may be dispensed with. The sutures should not penetrate the mucous membrane of the trachea. Silk has been employed in most cases, as it stands strain better than catgut. The divided muscles should be sutured, and the inversion of the skin caused by the platysma should be corrected. In most cases it is unnecessary to feed by a tube or by the rectum, and the patient may safely be allowed to swallow food. Antiseptic precautions should be used throughout

REFERENCE.—¹"Brit. Med. Journ.," May 1897.

WOUNDS (Septic).

Priestley Leech, M.D., F.R.C.S.

Maylard¹ recommends the application of pure **Carbolic Acid** in all kinds of acute septic cases, whether these be of the nature of acute abscesses, of acute gangrene, or of septic inflammatory processes connected with malignant disease. The application is not painful, except the mechanical manipulation of the wound and its surfaces.

REFERENCE.—¹"Brit. Med. Journ.," p. 1475, vol. I, 1897.

XANTHOMA.*T. Colcott Fox, M.B.*

Apropos of a case of *X. palpebrarum*, C. W. Allen said he operated with much success and rapidly by means of his flat electrolytic needle, at one sitting. G. H. Fox and Lustgarten agreed that **Electrolysis** was a successful method, but Fox said there was a tendency to relapse.

Politzer¹ separates xanthoma localized in the eyelids from *X. multiplex*, both on clinical and histological grounds. Common eyelid xanthoma, he thinks, is not a new growth, but due to a generation of pre-existing, embryonally misplaced-striped muscle tissue. The xanthoma cell is a fragmented muscle fibre in a state of granulo-fatty degeneration, with proliferation of the muscle-cell-nuclei. On the other hand multiple xanthoma is an irritative hyperplastic development of connective tissue, whose cells produced fibrous tissue on the one hand, or underwent fatty degeneration on the other. It is probably due to a toxæmic condition, as in 85 per cent. of the recorded cases there was either diabetes or some severe lesion of the liver with jaundice.

Cases of *X. diabetorum* are recorded by Toepfer,² Majocchi,³ and Phineas Abraham.⁴

Darier⁵ has hunted up Chauffard's interesting case of *elastic pseudo-xanthoma*.

REFERENCES.—¹"Amer. Dermat. Assoc.," 1897; ²"Archiv. f. Derm. v. Syph.," 1897; ³"Giorn. Ital. d. mal. ven. e. d. pelle," 1896; ⁴"Derm. Soc. of Gt. Brit.," 1897; ⁵"Internat. Cong. Derm.," Lond., 1896.

An Atlas of the Bacteria Pathogenic in the Human Subject.

BY SAMUEL G. SHATTOCK, F.R.C.S.

THE object of the accompanying figures (*Plates XXIII to XXX*) is to present graphically from original preparations all the chief bacteria which are pathogenic in the human subject. The collection has been divided into two parts, the second of which it is proposed to publish in the next succeeding volume of the "Annual."

The originals of the drawings (in the Museum of the Royal College of Surgeons, London,) have been made under the author's supervision by Mr. G. T. Gwilliam, F.R.A.S., who from an astronomical experience is a draughtsman of extreme accuracy, and they may be relied upon as absolutely faithful representations of the objects themselves.

All the preparations have been drawn as viewed under a $\frac{1}{2}$ homogeneous immersion, Leitz, ocular No. 2, tube length 170 millimètres, giving a magnification of 680. It is to be noted, however, that in order not to tax the eye, they have in all cases been slightly enlarged in the drawing. The actual magnification amounts to about 1000.

Each illustration gives the chief forms selected from several fields in order to bring out their variations, their differences in size, or their grouping, etc., a result which will dispel the idea of uniformity in these respects that is sometimes gained from representations where such differences are studiously excluded.

All the drawings have been made from cultures in an active stage of growth, in order that abnormal, degenerate forms might be eliminated. The precise mode of preparation, the age of the culture, and, when important, its original source, are given under the several figures.

The fungi which are pathogenic in the human subject belong to the botanical subdivisions of: (1,) Schizomycetes ($\Sigma\chi\lambda\acute{\iota}\omega$, I split, Μύκης , a fungus) Fission-fungi, or Bacteria; (2,) Blastomycetes (Βλαστός , a bud) Budding-fungi, or yeasts; (3,) Hyphomycetes (Ύφος , a web), Hyphal-fungi, or moulds.

Strictly speaking the study of bacteriology does not comprise that of yeasts and moulds, which are for this reason excluded from some systematic works devoted to bacteriology. Much less could the consideration of animal micro-parasites find a place in a strict system of bacteriology, although owing to its present small dimensions this subject is included, and conveniently so, in at least one standard English work on "Bacteriology."

With the exception of thrush, all the illustrations given are limited to bacteria proper or schizomycetes.

In regard to this classification of pathogenic fungi,* it will be enough to say that bacteria are achlorophyllous vegetable organisms characterized by a fissiparous method of reproduction, though in a certain number there occurs a second or additional method, viz., spore-formation.

Yeasts, whilst again they may multiply by spore-formation, do so as an ordinary method by budding, *i.e.*, in place of the cell becoming symmetrically partitioned into two or more elements, there grow out one or more processes or buds, which after increasing to a certain size, may become abstricted off and disconnected from the parent cell, or whilst acquiring an independent cavity, may remain connected with it and generate further elements by the same plan. The hyphomycetes occupy a higher position than either of the foregoing groups, in that they present distinct organs of fructification, and are capable, moreover, of a proper sexual process of propagation.

Not that these subdivisions are more clearly defined than are others in biology.

The branching filamentous forms at times met with in the tubercle and tetanus bacillus make an approach towards the mycelial productions of moulds; and in actinomyces and streptothrix *Maduræ*, a dense and branched mycelium is regularly developed in artificial cultures.

The microscopic characters of bacteria are in scarcely any case sufficient to allow of their identification. It is by the *ensemble* of their cultural characters on different media, their chemical products, the results of experimental inoculation upon animals, that identification is possible, and to these must be added the effects produced upon bacteria by the action of specifically immunized sera.

Accumulated observations have disclosed a bacterial kingdom of

* The absence of chlorophyll, which has commonly served as a basis for defining the group of fungi, is not held by Sachs as sufficiently fundamental for such a subdivision; he classes with achlorophyllous schizomycetes certain chlorophyllous forms which multiply by a similar method, under the name of schizophyta, etc.

PLATE XXIII.



Saccharomyces Albicans.

PLATE XXIII.

SACCHAROMYCES ALBICANS. THE BLASTOMYCES OR YEAST-CAUSING THRUSH.

The drawing is made from a hanging drop of a broth culture which had been incubated at 37° C. for 24 hours.

There is shown on the left and upper part of the figure a series of simple oval cells; and below these, similar cells from which the formation of a second element is proceeding; this appears as a minute bud growing out from one of the ends or side of the parent cell. Where the cells lie in groups their opposed faces are flattened or faceted, an extensive group resembling a mosaic. The process whereby a filamentous stage is reached consists in the elongation of the cells, which continue to give rise to others from apex and sides until a complex branching system results. The chief secondary branches arise from the nodes of the main filaments, and from the former a tertiary set of smaller cells, and so forth.

On the right hand side are shown four cells, the protoplasm of which has been tinted with a dilute aqueous solution of gentian violet; they exhibit a certain number of spaces filled with fluid, or vacuoles, analogous to those holding sap in higher plants; and spherical granules, the function of which is not yet known,—possibly zymogenic in nature.

In the elongated or filamentous cells the vacuoles are sometimes of considerable length, and can be readily seen in the unstained condition.

PLATE XXIV



Fig. 1.—Typhoid Bacillus.

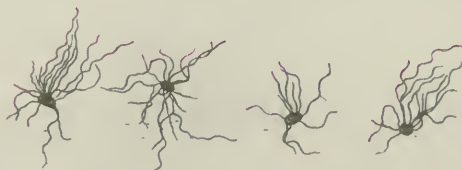


Fig. 2.—Typhoid Bacilli.

PLATE XXIV.

FIG 1.—TYPHOID BACILLUS.

From a culture 24 hours' old, incubated at 37° C., and made on the surface of agar.

Stained with carbol fuchsin, washed in water acidulated with acetic acid. Straight or very slightly curved rods, the shortest of which appear as oval: the bacilli present great variations in length and breadth: parallel grouping is fairly common. The filamentous forms exhibit no trace of a segmented or composite structure.

FIG. 2.—TYPHOID BACILLI.

Five typhoid bacilli, from a dried preparation stained by Van Ermengen's silver method, and showing the long wavy flagella arising around them. The largest number shown is seventeen, but this may be exceeded.

PLATE XXV

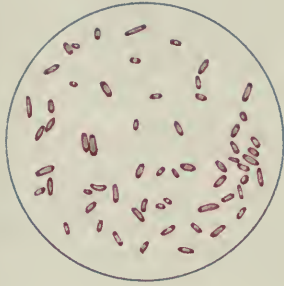


Fig. 1.—Colon Bacillus.



Fig. 2. Colon Bacillus.

PLATE XXV.

FIG. 1.—COLON BACILLUS.

From a culture in a simple aqueous solution of Peptone, 24 hours' growth, incubated at 37° C.

The figure is introduced to show the "end-staining" often observed in bacilli, the causation of which is not fully understood. The interest attaching to the present specimen, is that it demonstrates the effect of one particular factor in leading to this result. It has been noticed by Mr. H. C. Haslam that the "end-staining" occurs regularly in the colon bacillus if it is grown in alkaline media.

In an unstained hanging drop corresponding appearances present themselves, the ends of the bacilli being darker and more granular than the centres.

FIG. 2.—COLON BACILLUS.

From an agar culture of 48 hours' growth, incubated at 37° C.

Showing the usual form of the Colon Bacillus: plump straight rods with rounded ends, variable in length and thickness, the shortest appearing as oval. Parallel grouping occurs. As there are many varieties of Colon Bacillus, it is necessary to take one as a standard; that selected is from a culture of Professor Escherich's (the original describer of the bacillus). A subculture of this particular organism was obtained from Professor Escherich by Mr. Wallis Stoddart, to whom the author is indebted for a sample of the strain.

PLATE XXVI.

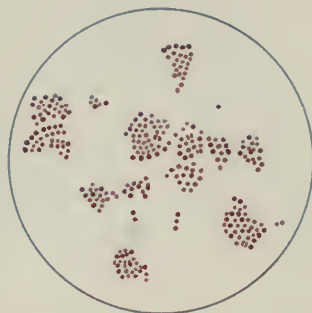


Fig. 1.—*Staphylococcus Pyogenes Aureus*.

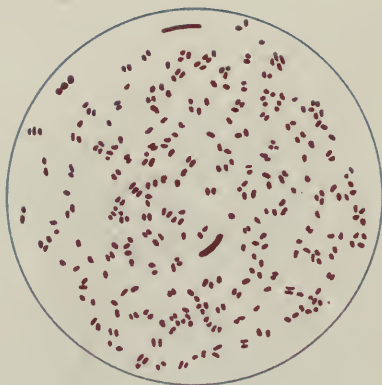


Fig. 2.—Plague Bacillus.

PLATE XXVI.

FIG. 1.—STAPHYLOCOCCUS PYOGENES AUREUS.

From the edge of a growing culture on agar.

Carbol fuchsin, washed in acidulated water. The cocci occur in clusters or botryoidal groups (Σταφυλή—bunch of grapes), here and there in short chains, twos, or singly. The individuals in the groups vary in size, indicating probably differences in age; in some of the groups the process of division appears in a diplococcus with flattened sides, the elements of which have not yet parted and become spherical.

FIG. 2.—PLAGUE BACILLUS.

Agar culture, incubated 37° C.; the advancing edge of a three days' growth.

Carbol fuchsin, washed in acidulated water. Short rods, mostly of oval form, often in pairs, side by side. Here and there slightly curved, longer forms occur, some of remarkable thickness.

The original source of the bacillus was a Lascar admitted into the Seamen's Hospital, Albert Dock, from a P. and O. steamer arriving from Bombay; the bacteriological diagnosis was made by Dr. R. T. Hewlett; inoculations carried out upon guinea pigs caused death with typical symptoms.

The forms examined in the blood of animals experimentally inoculated with this particular bacillus showed marked "end-staining;" this is entirely absent in the specimen prepared from the agar culture.

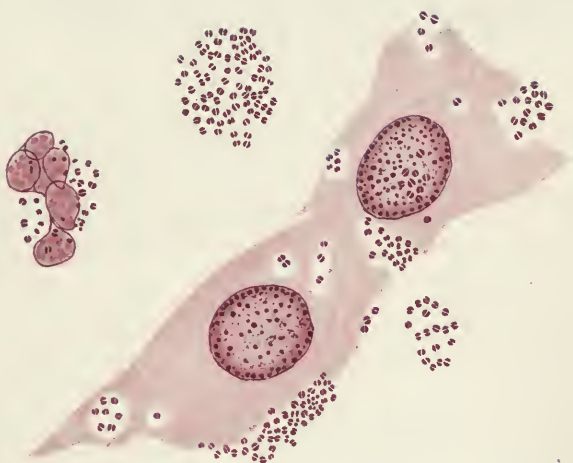
PLATE XXVII.

GONOCOCCUS.

A cover-glass preparation of urethral pus, made by means of the loop, from the urethral meatus in a case two days after infection.

Carbol fuchsin, washed in acidulated water. Two flattened epithelial cells from the urethra, and one "polynuclear" leucocyte are represented. The stain has tinted the bodies of the epithelial cells, but not that of the pus cell. The cocci, without exception, occur in pairs with flattened or slightly concave faces; here and there is a group of four. The diplococci are set in groups or colonies which lie outside and unconnected with the cells; elsewhere, upon and within them. The groups connected with the epithelial cells are surrounded with an uncoloured zone of ground substance indicating their location within the cell protoplasm. Those about the nucleus of the leucocyte are in the cell protoplasm.

PLATE XXVII



Gonococcus.

PLATE XXVIII.

FIG. 1.—ANTHRAX BACILLUS.

Agar culture, incubated at 37° C.; of 24 hours' age; the films treated with 20 per cent. acetic acid before staining with aqueous solution of gentian violet.

The lowest filament is as yet sporeless; some of its component segments are but half the length of others, and separated by a narrower interval, indicating that fission and interstitial elongation are proceeding in the filament.

In the others, various stages of spore-formation are shown. The spores appear at first as minute unstained points at or near the centre of the segments, the capsule of the spores preventing the penetration of the dye. When fully grown, the spores distend the wall or "sheath" of the bacillary cell, from which they are subsequently set free, as shown at the highest part of the figure. In many of the sporulating segments there is a minute second point, probably an abortive second spore, since the fully developed spore is in most instances not strictly central, but nearer one end of the spore-bearing segment, and this whether the latter presents a second point or not.

The staining of the spores is best carried out by means of hot carbol fuchsin, and the use of acid and methylene blue as described under the Tubercle bacillus.

FIG. 2.—ANTHRAX BACILLUS.

Broth culture of 24 hours' growth, incubated at 37° C. Carbol fuchsin, washed in acidulated water.

Very few spores were found in the preparations, and none are present in the filaments figured. The spore formation takes place only under the free access of gaseous or atmospheric oxygen. The filaments adhere in tresses or strands.

Active subdivision is taking place in the segments, the ends of which remain straight or squarely cut.

PLATE XXVIII



Fig. 1.—Anthrax Bacillus.

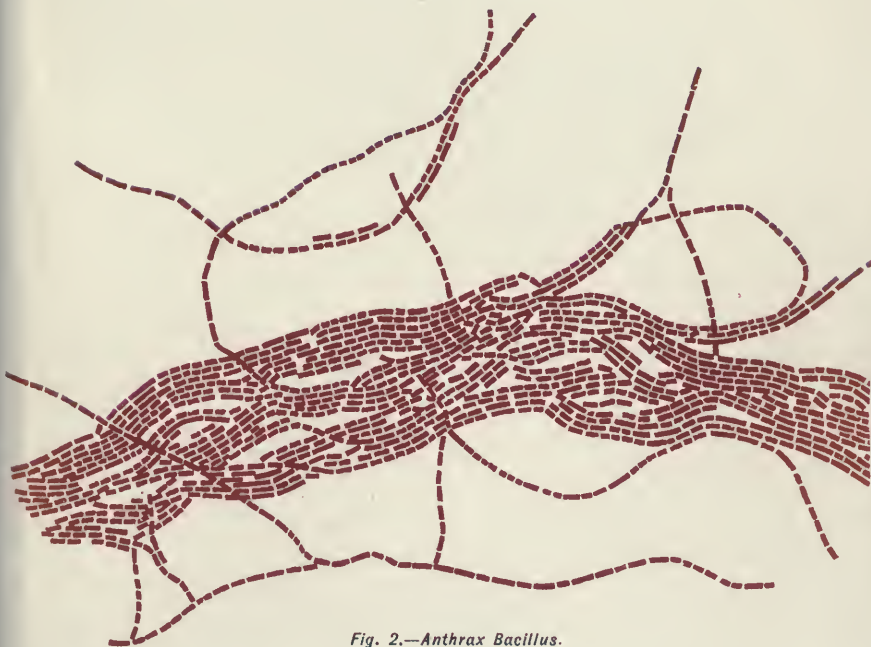


Fig. 2.—Anthrax Bacillus.

PLATE XXIX.

ANTHRAX BACILLUS.

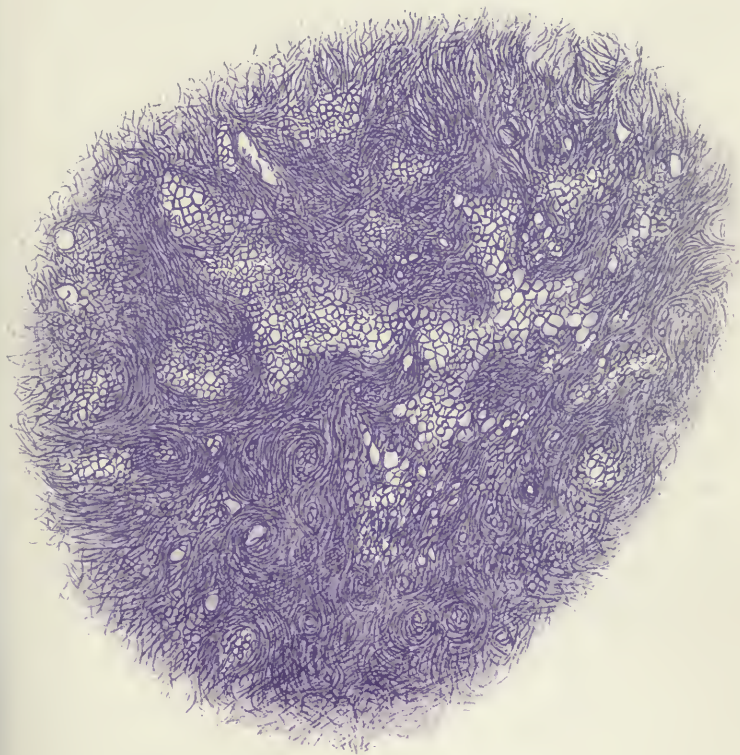
"Impression preparation" of a small colony on agar in a Petri capsule; lowly magnified; the actual diameter of the colony is one millimetre.

Aqueous solution of gentian violet, washed in acidulated water.

The colony consists of a feltwork of wavy filaments, extending at the margins in tufts or hairy processes.

It was transferred to the cover-glass by allowing the latter to fall on the colony and then carefully raising it from one side.

PLATE XXIX.



Anthrax Bacillus.

PLATE XXX.

TUBERCLE BACILLUS.

A preparation of Tubercular sputum, distributed over the cover-glass in the fresh state. Carbol fuchsin, heated on the cover, the latter then transferred to a watch glass of 25 per cent. hydric sulphate till decolourized, washed in water, and then counter-stained with aqueous solution of methylene blue in the cold, washed again in water, and allowed to dry. Tubercular sputum is best examined when no antiseptics have been used for its disinfection. It should be spread out in a thin layer over a sheet of glass on a black surface, or one of the black-bottomed plates made for the purpose; the most purulent foci are then isolated with needle and forceps, or cut out with scissors and forcibly broken up and distributed on a series of cover-glasses with the back of the forceps, whilst the covers are steadied by the pressure of a needle. Passing the films through the flame is not necessary. If the cover-glasses are not heated after the carbol fuchsin has been filtered on to them, the dye must be allowed to act for a considerably longer time—fifteen minutes: if heated, they must be held over a low flame in a small pair of forceps of which the ends have been somewhat sharply bent, in order that the dye may not be conducted to the under side of the glass.

The rationale of this particular method is as follows:—the carbol fuchsin stains all the different microbes present in such a film; with the exception of the tubercle bacilli, all are afterwards decolourized by the action of the hydric sulphate, to be re-dyed, together with the cell nuclei, by the methylene blue. This peculiar resistance to the action of the acid is common to the tubercle, leprosy, and smegma bacilli.

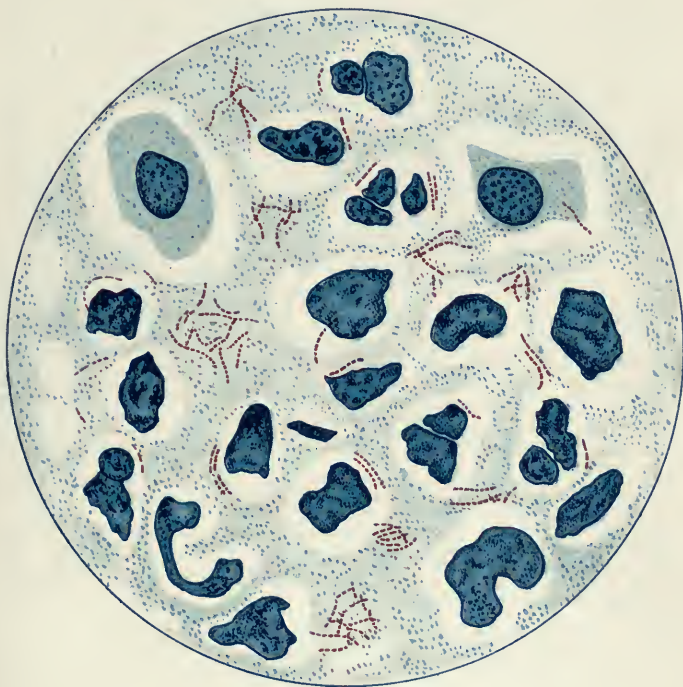
In the examination of pure cultures of the bacillus, this differential method is unnecessary, and the organism may be stained simply with carbol fuchsin, or by Gram's method, etc.

In addition to the "polynuclear" leucocytes (pus cells), there are shown in the figure two squamous epithelial cells derived from the upper part of the respiratory passages; the body of these is faintly tinted with the blue.

Many of the tubercle bacilli occur in small grotesque groups, that have been likened to Chinese characters.

The bacilli are mostly slightly curved, their extremities rounded, and their protoplasm segmented, so that the microbes appear "beaded." The beading is not invariable in such preparations of sputum.

PLATE XXX.



Tubercle Bacillus.

such dimensions that to determine or identify any given individual is a matter of increasing difficulty. The problem of identification is reduced, however, within comparatively easy limits when those organisms which are pathogenic are alone considered, and still more so when attention is restricted to those that cause disease in the human subject.

The fundamental argument adopted by Darwin for the theory of evolution, viz., the impossibility of defining species, holds equally through microscopic and macroscopic forms of life. Nevertheless, of the different methods of classifying bacteria, those founded upon form are the only ones at present practicable. Of such classifications there are almost as many as there are authors. For all practical purposes, however, the pathogenic bacteria are reducible to spheres and rods; the latter being of the most various lengths, at times produced into long filaments which may be straight or spirally twisted, or, in a few instances, branched.

As to the terms bacterium and bacillus, the former is now obsolete; every straight rod-shaped organism is a bacillus. If the first is still employed, it is only in deference to pre-established usage; the early distinction between the two, founded as it was upon difference in length, is rendered valueless by the variations in this respect presented by one and the same organism: in the more highly pleomorphic examples, the shortest forms of bacilli may be indistinguishable from spheres or cocci. The proposal to name as 'bacilli' straight, rod-like organisms which form spores, and 'bacteria' those that do not, has not been followed, since there is nothing whatever in the terms indicative of such a difference. Besides the straight rod or bacillus, the other chief forms of pathogenic bacteria are the spherical, or cocci; and the twisted rod or spirillum.

It may be observed, in passing, that micrococci are not in all cases geometrically spherical. The faces of subdivision are very frequently flattened so long as the resulting elements remain united, whatever disposition the grouping takes—whether in twos (diplococci), fours (tetrads), eights (sarcinacocci), or linear series (streptococci); it is not rare, again, to find the elements of a chain—or streptococcus elongated in the direction of its length, *i.e.*, oval in place of spherical.

The *microscopical examination of bacterial cultures* may be reduced to a comparatively simple technique. Bacteria may be examined after being dried, or in their natural condition. The advantage of the first method is that the preparations are permanent, and to this must be added the greater facility with which they admit of being

drawn or photographed. Under the other, the organisms suffer no reduction in size or alteration in form, nor can appearances artificially produced be mistaken for such as are natural. There is the same difference, in short, as between the study of plants growing in a garden and those dried in a herbarium. The second method is, therefore, in all cases preferable; obviously for the study of growth and reproduction it is absolutely necessary.

The Hanging Drop.—Examinations in the natural state are carried out by means of the hanging drop, which may be described in detail as being the most beautiful of all methods, and as expeditious as any.

If a culture on agar or gelatine (when this is not liquefied by the growth) is to be examined, a thin narrow ring of vaseline is painted around, but a short way from, the depression of a hollow ground slide; a single öse or loop of distilled water is then transferred to the centre of a square or circular cover-glass (No. 1 thickness). For the sake of those unacquainted with such matters, it may be said that the öse or loop is a small eyelet made at one end of a piece of platinum wire about two and a-half inches in length, the other end of which is pressed into the end of a piece of solid glass rod, seven inches long, softened in the flame of a Bunsen burner; the diameter of the eyelet, which is made by bending the wire with the end of a small-pointed pair of forceps into a complete circle, should be two millimètres (about $\frac{1}{16}$ inch), and in all cases it is to be sterilized by raising it to a red heat in the flame before and after use (*Fig. 76*). After sterilization



Fig. 76.—The öse or platinum loop, the *length* of the wire and glass rod reduced.

in the flame, the loop is inserted into the culture tube, applied to the growing edge of the culture, withdrawn, and immediately transferred to the drop of water on the cover-glass, in which it is moved until slight turbidity appears; the excess of the culture on the loop is now burnt off in the flame, and the bacteria thoroughly distributed on the cover-glass by its means, the drop being extended so as to cover an area of about four millimètres in diameter. The cover-glass is then seized at the edge in a small pair of forceps, turned over, and applied to the hollow ground slide so that the minute drop of fluid lies over the centre of the hollow space in the slide without coming into contact with the latter: the gentlest pressure made around the border of the cover-glass will then render the moist chamber completely air-

tight (*Fig. 77*). A moist chamber may be improvised, however, in a very effective manner on an ordinary flat slide as follows : cut a piece of thick blotting-paper an inch square, fold it, and cut away a small



Fig. 77.—Section of hollow-ground slide with cover-glass *in situ*, slightly reduced.

semicircle from the centre of the folded border, open it out, wet it, and lay it on the slide : the cover-glass having been prepared exactly as before, is inverted so that the hanging drop lies over the centre of the circular hole in the blotting-paper (*Fig. 78*).

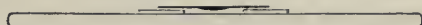


Fig. 78.—Section of slide and moist chamber prepared with blotting paper, slightly reduced.

If the examination be prolonged, it is necessary to moisten the paper from time to time. For the study of such preparations, much of the light must be cut off with the diaphragm, assuming that the Abbé condenser and plane side of the mirror are used : unstained organisms are otherwise scarcely discernible.

The most suitable area for observation is the edge of the drop where the film of fluid is thin, and where there is what may be called a "still" layer in which an accumulation of the bacteria takes place, and where their movements (whether active or Brownian) are less lively, and eventually cease.

The best plan of finding the edge is to place the slide with the hanging drop centrally on the stage of the microscope, transfer a droplet of cedar oil exactly over the hanging drop, and screw down the coarse adjustment until the oil rises up to meet the object glass ; the rest of the focussing is then carried out by means of the fine adjustment which is screwed until some of the bacteria come into focus ; the slide is then moved in any one definite direction until the edge of the drop is reached. Besides the forms, the motility of the bacteria is to be determined by the hanging drop. For the latter purpose, the use of broth cultures is preferable to those made on agar ; nevertheless, if a preparation of the typhoid bacillus, *e.g.*, is made from an agar culture of twenty-four hours' growth, in the way described, there is no difficulty in observing the motility of the microbe, though the movements are not so active as in a broth culture. Examined in the hanging drop it is to be noted that even non-motile bacteria present marked passive or Brownian movements ; these are distinguishable by the fact that no real locomotion takes place, the movements being of a to-and-fro or oscillatory character.

Colouration of the Hanging Drop.—The hanging drop having been so viewed, may next be advantageously stained. It is not necessary for this purpose to make a new preparation. The cover glass is removed and turned over on a piece of filter paper, so that the drop is again brought uppermost.

The best staining fluid is a dilute solution of gentian violet, made by adding .5 c.c. of an aqueous solution of gentian violet. (Gentian violet 2.25 grammes, distilled water 100 cubic centimètres, to 10 cubic centimètres of distilled water.) The dilution may be arrived at sufficiently well by placing a few drops of the gentian violet solution in a test-tube and adding distilled water until the fluid is sufficiently dilute to allow of being seen through when held between the eye and the light. The sterilized öse is dipped into this, and the drop of dye mixed on the cover-glass with the hanging drop already there; the cover-glass is then again inverted and replaced over the hollow slide or upon the blotting-paper of the moist chamber. The ordinary histological method of running in the dye from one side of a wet preparation made without hollow slide or moist chamber, is followed by too much displacement.

The action of the dye is easily studied in all its grades in such a hanging drop, motile bacteria retaining their power of movement whilst the colouration is proceeding in them.

To make a Permanent Preparation of the Hanging Drop.—Lastly, a permanent specimen may be made from the same preparation by removing the cover-glass, placing it again with the drop upwards on a piece of filter paper beneath a watch-glass or bell-jar, and allowing it to dry; after which a small drop of Canada balsam (dissolved in xylol) is placed on a slide, a second small drop on the dried film, and the latter then allowed to fall on the slide in the usual manner. Or, after the examination of an unstained hanging drop, this may be allowed to dry in the same way and treated in the manner to be presently described under the dry method.

The dyeing of hanging drops made from broth cultures (in which case, of course, no water need be placed on the cover-glass) is not quite so satisfactory as those from agar, in consequence of an extremely fine coloured precipitate appearing in the fluid, probably a proteid present in the broth, which unites with the dye. This precipitate is unconnected with the growth of the bacteria, as it appears if sterile broth is mixed with the diluted dye and examined as a hanging drop. Nevertheless, in such broth preparations when coloured, many fields may be found devoid of adventitious granules, which, it may be noted in passing, exhibit lively Brownian movements.

The examination of jelly that is being liquefied by the growth of an organism, is conducted precisely as that of a broth culture ; and admirable preparations may be obtained by colouring the hanging drop with dilute solution of gentian violet in the manner already described.

Of all the methods of bacterial microscopy the hanging drop, with few exceptions, is the best ; the important method of Gram, for instance, cannot be carried out except on a dry preparation.

The Dry Method.—The more minute attention paid to details, the more satisfactory will be the results.

To commence with, then, the cover-glasses (No. 1 thickness) must be properly clean. They are to be moved about in a capsule or other flat vessel of hydrochloric acid, washed in common water and then kept in a wide-mouthed stoppered bottle of absolute alcohol, to which glacial acetic acid has been added in the proportion of 10 per cent. The addition of acid will be found to prevent the cover-glasses receiving too high a polish when wiped, a result which greatly interferes with the equable distribution of the bacteria over the surface. Three cover-glasses having been wiped dry, a loop of distilled water is placed on each ; the loop should be drawn a short way over the surface, and if it is found that the water does not adhere to the glass, but returns again to a bead, the cover must be replaced in the acidulated alcohol and wiped afresh. The sterilized loop having been inserted into the culture tube and a small quantity of the growing edge withdrawn, it is applied to the drops of water in succession, and the residue having been burned off in the flame, the loop is used to distribute the turbid drop over the entire face of each of the cover-glasses, which are then allowed to dry ; the distribution is facilitated by breathing on the surface, and the glasses are best steadied by the pressure of a needle. The prepared side is to be kept upwards throughout all the subsequent manipulations. The time-honoured custom is now to pass the covers thrice across the flame, with the object of coagulating the albumen and fixing the films. Although so generally adopted, it is in reality wholly unnecessary ; if the transit through the flame is made sufficiently slowly to really heat the glass, there is a risk of inducing still further shrinkage of the bacteria. Not only is the practice unnecessary for preparations made from agar cultures, but from careful comparative experiments, the author has found it equally without advantage in the case of such as are made from liquefied gelatine or from broth ; the film will remain adherent even if the dye has to be heated on the glass, provided always that it is not afterwards violently washed beneath a stream, but in a vessel, of water : to

such cultures the addition of water is not required ; the loop is simply dipped into the fluid and distributed over the cover-glass.

The next procedure is that of staining. For this purpose aniline dyes are alone used ; none others are sufficiently intense. The three chief are carbol fuchsin, aqueous solution of gentian violet, and aqueous solution of methylene blue ; for special purposes modifications are necessary, the most important of which are Gram's method and those for staining spores, capsules, and flagella. Of these dyes carbol fuchsin* holds the first place, and takes the same position for bacterial staining that hæmatoxylin does for histological : it not only dyes all known bacteria, but gives, as a rule, cleaner preparations, in consequence of its being more readily washed out from extraneous material.

The cover-glass should be quite covered with a high bead of the stain. This may be done from a drop bottle, but the author invariably filters the stain directly on to the cover-glass through a small cone of filter-paper held across its overlapping parts in a pair of forceps. The stain having remained on from five to fifteen minutes, the cover-glass is taken up with a fine pair of pointed forceps, tilted to throw off the stain, and at once gently submerged in a saucer of water faintly acidulated with acetic acid ; the washing may be completed in a second or a third saucer, and finally in unacidulated water. The degree of acidity can be arrived at by pouring a few drops of glacial acetic acid into a saucer, inverting it to get rid of the excess, and then filling with water, common or distilled—a solution of about '5 c.c. glacial acetic acid to 70 c.c. of water.

The washing is preferably carried out in this way rather than beneath a stream, as the latter tends to displace the film ; nor is the excess of the dye so well removed by water without the acid.

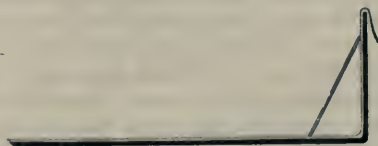


Fig. 79.—Sheet of lead bent at right angles, with filter paper folded upon it, and cover-glass stood edgewise to drain without the film coming in contact with the paper.

After the final washing the cover-glass is allowed to drain and to dry by placing it obliquely with the prepared surface downwards,

* Fuchsin, 1 gramme ; absolute alcohol, 10 c.c. Dissolve and add 100 c.c. of a 5 per cent. aqueous solution of carbolic acid.

against a sheet of filter-paper folded at right angles over a piece of lead (*Fig. 79*). It may be more rapidly dried by pressing between filter-paper, but at the risk of damaging the film and transferring fibres to it. When dry, the preparation is completed by mounting it on a slide with a xylol solution of Canada balsam.

In a certain few cases (as in agar cultures of the anthrax bacillus) this method does not satisfactorily clear the preparation, *i.e.*, decolourize the ground-substance in which the bacteria lie.

Under such circumstances, the cover-glasses, after being prepared with the bacteria and allowed to dry, are to be left for ten minutes in a capsule or saucer of 20 per cent. solution of acetic acid; after which they are washed in distilled water, allowed to drain and to dry, edgewise, on filter-paper, and afterwards stained in the usual manner, the subsequent washings being carried out without acetic acid. It is not *requisite* to pass the films across the flame at any stage of the procedure, even if the cover-glasses have been prepared from broth cultures. Even this at times fails to give clean preparations (as, *e.g.*, in the case of the glanders bacillus); the use of saturated alcoholic solution of gentian violet, left on the cover-glass for an hour (beneath a watch-glass) will often then give satisfactory results; the washing in such circumstances should be carried out rapidly in water to which no acetic acid has been added.

PART III.—MISCELLANEOUS.

Legal Decisions

AFFECTING MEDICAL MEN AND THE PUBLIC HEALTH.

By J. E. COONEY, L.R.C.P., D.P.H.,

Late Medical Officer of Health of Fulham, London ; of the Middle Temple, and of the South-Eastern Circuit, Barrister-at-Law.

Each year there are a number of decisions made by the High Court of Justice with which the medical practitioner should be acquainted, or have some ready means of consulting, should similar questions arise in the course of practice.

It will be understood that the reports are necessarily much abbreviated, but, notwithstanding, we have endeavoured faithfully to state the law. The cases as a whole cannot be found in any law text-book, and may not be mentioned or cited for years in such books. They will be found useful to correct, amplify, or explain such principles of law as already appear in books on this subject in daily use.

ADULTERATION OF FOOD.

HEWITT *v.* TAYLOR (1896) 1 Q.B. 287.

Adulteration—Evidence—Certificate of Analyst—Sale of Food and Drugs Act, 1875, s. 21.—Special case stated by justices under the Summary Jurisdiction Acts. At the hearing, on an information preferred by the appellant under s. 6 of the above act, for selling milk not of the nature, substance, and quality demanded, the respondent pleaded not guilty, but did not require the analyst to be called as a witness, nor that the milk should be sent for analysis to the Inland Revenue Department. He, however, tendered himself as a witness, and gave evidence that he milked the cows himself, put the milk into the cans, that there was no water in the cans, and that he had added no water afterwards, and that no person but himself had control of the cans from the time he put the milk therein to the time of the sale. A certificate of the public analyst was produced, which, after stating the

constituent parts of the milk, went on to say : " I am of the opinion that upwards of six parts of water have been added to every hundred parts of the poorest milk." The appellant contended that, under the circumstances, the certificate was conclusive ; but the justices dismissed the information.

Held, That the production of the certificate of the analyst is not conclusive evidence if the defendant tenders himself as a witness and gives evidence on his own behalf. The appeal was dismissed.

FORTUNE *v.* HANSON. (1896) 1 Q.B. 202.

Adulteration—Food and Drugs—Certificate of Analysis, Sufficiency of—Sale of Food and Drugs Act, 1875, ss. 6, 18, 21.—Special case stated by one of the Metropolitan police magistrates. The respondent sold to one E. Jones a churn of milk. While the milk was being delivered, the appellant, an inspector of nuisances of Islington, procured a sample, had it analyzed, and submitted a certificate of analysis at the hearing to the effect that, " I, the undersigned, public analyst for the parish of St. Mary, Islington, London, do hereby certify that I received on 25th April, 1895, from Mr. Fortune, a sample of milk for analysis (which then weighed 20 ounces), and have analyzed the same, and declare the result of my analysis to be as follows : I am of opinion that the said sample contained the percentage of foreign ingredients as under : 5 per cent. of added water to the prejudice of the purchaser." Objection was taken on behalf of the respondent that the certificate was bad, and inadmissible as evidence.

Held, That the certificate was bad as evidence, under the Act, of adulteration, because it did not state the constituent parts of the sample analyzed. The appeal was dismissed.

BRIDGE *v.* HOWARD. (1897) 1 Q.B. 80.

Adulteration—Food and Drugs—Certificate of Analysis, Sufficiency of—Sale of Food and Drugs Act, 1875, s. 18.—Special case stated by justices, under the Summary Jurisdiction Acts. The respondent sold a pint of milk to the appellant, an inspector of weights and measures, who produced the following certificate from the public analyst at the trial, which was, so far as is material, as follows : " Sample received on 26th March, 1896, weighing 6 ozs. Analyzed. I am of opinion that it contains the parts as follows : Milk, 94 per cent.; added water, 6 per cent. This opinion is based on the fact that the sample contained 7·97 per cent. solids not fat, whereas genuine milk contains not less than 8·5 per cent. solids not fat. Sample had undergone no change to interfere with analysis." The respondent objected that the

certificate was bad and inadmissible, on the ground that it did not state specifically as the result of analysis the constituent parts of the sample analyzed. Justices upheld the objection.

Held, That the certificate was good, although it did not state the constituent parts of the sample analyzed. *Appeal allowed*.

Fortune v. Hanson (1896) 1 Q.B. 202 explained.

THE QUEEN *v.* HORACE SMITH (1896) 1 Q.B. 596.

Adulteration—Magistrate—Jurisdiction—Place where offence committed—Analysis—Sale of Food and Drugs Act, 1875, ss. 6, 20, 27.—An information was preferred in the Clerkenwell Police Court by an inspector of nuisances for the district, charging the defendant, a farmer, of Brook Farm, near Oakham, Rutlandshire, with having, contrary to s. 27 of the Sale of Food and Drugs Act, 1875, given a false warranty in writing with respect to milk sold and delivered by him to a dairy company at East Finchley, Middlesex. The sale, delivery, and giving of the warranty had all taken place outside of the limits of the jurisdiction of the Clerkenwell Police Court; but the inspector had, with a view to a prosecution against the dairy company under s. 6, obtained a sample of the milk in the course of its delivery by them, within the jurisdiction of that court, to purchasers from them, and had submitted the sample to the public analyst of the district, who certified that it contained 14 per cent. of added water.

Held, That a Metropolitan police magistrate, sitting at the Clerkenwell Police Court, had no jurisdiction under the Sale of Food and Drugs Act, 1875, to hear and determine the information against the defendant. *Rule for a mandamus discharged*.

COOK *v.* WHITE (1896) 1 Q.B. 284.

Adulteration—Limit of time for taking proceedings—False warranty—Sale of Food and Drugs Act, 1875, s. 27—Sale of Food and Drugs Act Amendment Act, 1879, s. 10.—Special case stated. A summons was issued against A. Brown & Son, under s. 6, for having sold adulterated milk on 28th April. The defendants proved to the satisfaction of the court, that they had bought the milk in the same state as sold, and with a written warranty from the respondent. Thereupon a summons was forthwith issued on 24th May, for giving a false warranty in writing on 27th April, to A. Brown & Son, in respect of a churn of milk sold by the respondent to them. The summons was served on 28th May, which was more than twenty-eight days from the purchase of the milk for test purposes. The magistrate held s. 10 of the Act had not been complied with, and dismissed the summons.

Held, That a summons under s. 27 of the Sale of Food and Drugs Act, 1875, against the original vendor of a perishable article of food, for giving a false warranty in writing in respect of it to a purchaser, need not be served within twenty-eight days from the purchase of the food for test purposes from that purchaser. *Appeal allowed.*

SPIERS & POND *v.* BENNETT (1896) 2 Q.B. 65.

Sale of Article of Food in altered state—Disclosure of alteration—Mens rea—Sale of Food and Drugs Act, 1875, s. 9.—By s. 9 of the Food and Drugs Act, 1875, “No person shall, with the intent that the same may be sold in its altered state, without notice, abstract from an article of food any part of it, so as to affect injuriously its quality, substance, or nature, and no person shall sell any article so altered, without making disclosure of the alteration, under a penalty in each case not exceeding £20.” The appellants, a firm of refreshment contractors, entered into a contract with a dairy company for the supply to them of milk; the contract containing a warranty by the company as to the purity of the milk to be supplied. Milk was delivered under the contract at a refreshment room of the appellants; it was handed in a can to one of their servants, who poured a portion of it into a churn, which was placed on the counter for the purpose of the milk being sold to customers; it was so poured that a less proportion of cream was in the milk that went into the churn than in the milk which remained in the can. The respondent bought a glass of milk at the counter; the milk was drawn from the churn, and, on analysis, showed a deficiency of 17 per cent. of cream. Upon the glass in which the milk was served were engraved the words, “Not guaranteed as new or pure milk, or with all its cream, see notices”; and upon the refreshment counter was a printed notice to the effect that all milk sold by the appellants was purchased by them under a warranty of its purity and genuine quality; that they took all possible precautions to ensure its supply to their customers in proper condition, but were unable to guarantee it as new, pure, or with all its cream, and did not, therefore, sell it as such. The magistrate convicted the appellants on the ground that the notices did not disclose a sufficient disclosure of the alteration within the meaning of s. 9 of the Act.

Held, That assuming that the facts showed an abstraction from the milk, there had been a sufficient disclosure by the appellants of the alteration to satisfy the requirements of the section. In order to constitute the offence of selling an article in its altered state, without disclosure of the alteration, it is unnecessary to show a *mens rea* on the part of the seller. *Appeal allowed.*

DERBYSHIRE *v.* HOULISTON (1897) 1 Q.B. 772.

Adulteration—Scienter—Giving false Warranty to Purchaser—Sale of Food and Drugs Act, 1875, s. 27.—Special case stated by the stipendiary magistrate for Manchester. The appellant was charged, under sec. 27, with giving a false warranty in writing to a purchaser in respect of some butter sold by the appellant. The appellant purchased the butter in question, as the same in nature, substance, and quality as that so sold to one Hopkins, and with a written warranty to that effect, and the appellant had no reason to believe at the time when he sold it to Hopkins that the article was otherwise, and the appellant sold it in the same state as when he purchased it. Hopkins sold it to the respondent in the same condition as he had bought it. It was contended for the appellant, (1,) That it was necessary to prove that the appellant, at the time when he gave Hopkins the warranty, knew that it was false ; (2,) That on the facts stated he was entitled to be discharged from the prosecution under sec. 25. It was contended for the respondent to the contrary.

Held, That he was not liable to be convicted. *Appeal allowed.*

BUCKLER *v.* WILSON (1896) 1 Q.B. 83.

Margarine—Sale contrary to Act—Delivery to Purchaser in Borough—Jurisdiction of County Justices—Time for Service of Summons—Notification to Seller—Condition Precedent—Margarine Act, 1887, ss. 6, 7, 12—Sale of Food and Drugs Acts, 1875, ss. 6, 12, 14, 20, 21, 28, and 1879, s. 10—Poor Law Amendment Act, 1867, s. 27—Municipal Corporations Act, 1882, s. 154.—The appellant was convicted on the complaint of the guardians of the Louth Union by the county justices of Lincoln, under the Margarine Act, 1887, for selling margarine otherwise than in a package marked "Margarine," contrary to s. 6. The margarine was delivered to the purchaser in the borough of Louth, which had not a separate court of quarter sessions.

Held, affirming the conviction—That the county justices had jurisdiction ; That, the justices having found that the article sold was not a perishable article, s. 10 of the Sale of Food and Drugs Act Amendment Act, 1879, did not apply, and it was not necessary that the summons should be served within twenty-eight days from the time of the purchase ; That, the margarine not having been purchased for test purposes, or with the intention of submitting it to analysis, it was not a condition precedent to the prosecution under the Margarine Act that the notification of intention to have it analyzed, prescribed by s. 14 of the Sale of Food and Drugs Act, 1875, should have been given to the appellant.

Parsons v. Birmingham Dairy Co. (9 Q.B. D. 172) disapproved.

Guardians of Enniskillen v. Hilleard (14. L. R. Ir. 214) approved.
Conviction affirmed.

CLEANSING (Personal).

STATUTE LAW.

Cleansing of Persons Act, 1897 (60 & 61 Vic. ch. 31).—Sec. 1. On and after the passing of this Act, any local authority shall have the power, when in their discretion they shall see fit, to permit any person who shall apply to the said authority, on the ground that he is infested with vermin, to have the use, free of charge, of the apparatus (if any) which the authority possess for cleansing the person and his clothing from vermin. The use of such apparatus shall not be considered to be parochial relief or charitable allowance to the person using the same, or to the parent of such person, and no such person or parent shall by reason thereof be deprived of any right or privilege or be subject to any disqualification or disability. Local authorities may expend any reasonable sum on buildings, appliances, and attendants that may be required for the carrying out of this Act, and any expenses for these purposes may be defrayed out of any rate or fund applicable by the authority for general sanitary purposes or for the relief of the poor. Sec. 2. In England, "local authority" means the council of any county borough, the district council of any district, any board of guardians, and in the county of London any sanitary authority.

DRAINS. (See "Sewers.")

NUISANCES.

ATTORNEY GENERAL *v.* TOD HEATLEY (1897 1 Ch. 560) C.A.

Vacant Land in Metropolis—Deposit of Filth by Third Parties—Continuing Nuisance—Common Law Duty of Landowner—Injunction—Public Health (London) Act, 1891, ss. 30, 35, 138, 141.—The defendant was the owner and occupier of a vacant piece of land in the metropolis. He had surrounded it by a hoarding, but people threw filth and refuse over, and broke up the hoarding, so that the condition of the land and the use to which it was put constituted a continuing public nuisance. In an action by the Attorney-General at the relation of the Vestry of Westminster:—

Held, That it was a common-law duty of the owner of the piece of land to prevent it from being so used as to be a public nuisance; and that the Attorney-General was entitled to an injunction to enforce the performance of that duty.

TOTTENHAM URBAN DISTRICT COUNCIL *v.* WILLIAMSON & SONS,
LD. (1896) 2 Q.B. 353 C.A.

Nuisance—Action by Local Authority—Right to sue if Summary Proceeding inadequate—Public Health Act, 1875, s. 107.—Appeal from an order of a judge at chambers discharging an order for an interim injunction to prevent a nuisance. The Public Health Act, 1875, enacts in s. 107, that any local authority may, if in their opinion summary proceedings would afford an inadequate remedy, “cause any proceedings to be taken” against any person in any superior court of law or equity to enforce the abatement or prohibition of any nuisance.

Held, That such proceedings must be ordinary proceedings known to the law, and that, in the absence of special damage, a local authority cannot sue in respect of a public nuisance except by action in the nature of an information with the sanction of the Attorney-General.

Wallasley Local Board v. Gracey (36 Ch. D. 593) approved. *Appeal dismissed.*

BRETT *v.* ROGERS (1897) 1 Q.B. 525.

Landlord and Tenant—Lease—Covenant by Lessee to pay “all Taxes, Rates, Duties, Assessments, and Impositions”—Notice by Sanitary Authority to Lessee to abate Nuisance by making New Drain—Expenses incurred in complying with notice—Liability of Lessee—Public Health (London) Act, 1891.—Appeal from the judge of the Bloomsbury County Court. The defendant, who was the lessee of the plaintiff, covenanted to “pay the land-tax, sewers rate, and all other taxes, rates, duties, assessments, and impositions, parliamentary, parochial, or otherwise, which now are or shall at any time during this demise be assessed or imposed on or in respect of the said demised premises.” Very shortly after the commencement of the lease, the Vestry of St. Marylebone served a notice on the plaintiff, as owner, under the Public Health (London) Act, 1891, directing him to abate a nuisance on the premises, and for that purpose to take up a defective drain and lay a new drain throughout the premises. The plaintiff incurred expenses in complying with the notice, and sued the defendant to recover the amount.

Held, That the obligation to lay the new drain was a “duty imposed in respect of the premises,” and that the defendant was liable to pay to the plaintiff the amount expended by him in complying with the notice of the sanitary authority. *Appeal dismissed.*

VESTRY OF HAMMERSMITH *v.* LOWENFIELD (1896) 2 Q.B. 278.

Metropolis—Limitation of Actions—Nuisance Order, Costs of obtaining and enforcing—Summary Jurisdiction Act, 1848—Public Health (London) Act, 1891, ss. 11, 117.—Appeal from a decision of the judge of the Brompton County Court. The action was brought under s. 11 of the Public Health (London) Act, 1891, to recover £43 11s., the amount of the costs and expenses incurred by the plaintiffs in and about serving a notice, making a complaint, and obtaining and carrying into effect a nuisance order against the defendant. These costs and expenses were incurred more than six months before the county court action was commenced. The magistrate had not fixed, or had been asked to fix, the amount of the costs and expenses. The defence in the county court was that the action was barred, being subject to the six months' limitation imposed by the Summary Jurisdiction Act, 1848, s. 11. The County Court held the defence good, and gave judgment for the defendant. The plaintiffs appealed.

Held, The limitation imposed by the 1848 Act, of the time within which complaints or informations may be made or laid before justices applies to actions in the county court, brought under the Public Health (London) Act, 1891, s. 11, to recover costs and expenses incurred in and about obtaining and carrying into effect a nuisance order; so that such actions must be commenced within six months from the time when the costs and expenses were incurred. *Appeal dismissed.*

FIRTH *v.* STAINES (1897) 2 Q.B. 70.

Metropolis—Management Acts—Committee—Approval of Acts of by Vestry—Ratification—Act made Criminal by Relation—Metropolis Management Act, 1855, s. 58.—Special case stated by a metropolitan police magistrate. By s. 58 of the Metropolis Management Act, 1855, "It shall be lawful for . . . any (Metropolitan) vestry to appoint a committee . . . for any purposes which in the discretion of the . . . vestry would be better regulated and managed by means of such committee . . . Provided always that the acts of every such committee shall be submitted to the general body of the . . . vestry appointing such committee for their approval." A committee appointed by the Vestry of St. Leonard, Shoreditch, under the this section for the purpose (*inter alia*) of executing the Metropolis Management Acts, so far as they related to the public health of the parish, being informed by the sanitary inspector that a nuisance existed upon certain premises endangering the health of the inhabitants, directed the inspector to serve notice upon the owner to abate the

- nuisance, by requiring him, within seven days, to intercept the sewer gases from the house drains and provide proper ventilation, and in default to take proceedings. The inspector, in pursuance of such direction, served the required notice, and, upon the owner failing to comply with it, laid an information against him for penalties under the said Acts, and a summons was issued. After the issue of the summons and before the hearing of the information, the vestry by resolution approved the acts of the committee in causing the notice to be served and the information to be laid. At the hearing the magistrate was of the opinion that as the resolution of the committee had not been submitted to the vestry for their approval before the service of the notice, the notice was invalid, and he accordingly dismissed the summons, subject to a case for the opinion of the Court.

Held, That the approval of the Vestry, although given after the service of the notice and the issue of the summons, was sufficient, and that the owner was liable to be convicted. *Appeal allowed.*

VESTRY OF FULHAM *v.* SOLOMON (1896) 1 Q.B. 198.

Defective Water-Closets—Notice requiring Owner to Amend—Validity of—Public Health (London) Act, 1891, s. 39, sub. s. 3; s. 41, sub. s. 2.—By the Public Health (London) Act, 1891, s. 39, sub. s. 1, the County Council are required to make by-laws with respect to water-closets; and by sub. s. 3 any directions given by the sanitary authority under that Act, so far as they are not in accordance with such by-laws shall be void. By s. 41, sub. s. 2, if on examination any water-closet “appears to be in bad order and condition, or to require cleansing, alteration, or amendment,” the sanitary authority shall serve a notice on the owner requiring him to put it in proper order or condition. And, by sub. s. 3, “Any person who thinks himself aggrieved by any notice . . . of a sanitary authority under this section in relation to any water-closet . . . may appeal to the county council, whose decision shall be final.” The county council made by-laws under s. 39 with respect to future water-closets, prescribing the mode of their construction, but made none with respect to structural alteration of existing water-closets. The respondent was the owner of a water-closet which had been constructed before the making of the by-laws. The appellants, as the sanitary authority, purporting to act under s. 41, sub. s. 2, served a notice on the respondent requiring him to make certain structural alterations in the water-closet, viz., to remove the door and lath-and-plaster partition, and to construct the walls of the water-closet of brick or brick nogging, and make the water-closet door to open outwards through the outer wall. The respondent did not appeal against such

notice to the London County Council, nor did he comply with the said notice. At the hearing of the information, the magistrate held that he had jurisdiction to inquire into the validity of the appellants' said notice; that the notice was bad in substance; and that not being in accordance with the by-laws, was void under s. 39, sub. s. 3. He accordingly dismissed the summons subject to a case for the opinion of the Court.

Held, (1,) That upon a summons for non-compliance with the notice, the magistrate had jurisdiction to enquire into the validity of the notice notwithstanding the provisions as to an appeal to the county council; (2,) That the notice was void under s. 39, sub. s. 3, there being no by-laws for it to be in accordance with.

Held, also, by Kennedy J., That the "alteration or amendment" which the sanitary authority are empowered to require under s. 41, sub. s. 2, does not comprise structural alteration. *Appeal dismissed*.

REGISTRATION (Dental).

REG. *v.* GENERAL MEDICAL COUNCIL (1897) 2 Q.B. 203 C.A.

Appeal from a judgment of the Divisional Court, reported (1897) 1 Q.B. 764, discharging an order *nisi* which had been obtained calling upon the General Council of Medical Education and Registration of the United Kingdom to show cause why a writ of mandamus should not issue commanding them to place upon the Dentists' Register the name of the prosecutor, Isidore Spero. By s. 6 (c) of the Dentists' Act, 1878, any person at the passing of the Act *bonâ fide* engaged in the practice of dentistry is entitled to be registered under the Act. By the proviso in s. 7 a person shall not be registered as having been at the passing of the Act engaged in the practice of dentistry unless, before August 1st, 1879, he makes a declaration in the form in the schedule to the Act or to the like effect. This form declares that the applicant was *bonâ fide* engaged in the practice of dentistry at the date of the passing of the Act. By s. 37 a person who has been articled as a pupil shall, if his articles expire before January 1st, 1880, be entitled to be registered as though he had been in *bonâ fide* practice before the passing of the Act. At the date of the passing of the Dentists' Act, 1878 (July 22, 1878), the prosecutor was articled as a pupil, and had paid a premium to a dental practitioner entitled to be registered under the Act in consideration of receiving from such practitioner a complete dental education. The articles were for a period of three and a-half years, expiring on October 13th, 1878. The prosecutor did not produce or transmit to the registrar before August 1st, 1879, the declaration

required by s. 7 of the Dentists' Act, 1878, and he did not apply to be registered until several years later, when the General Council refused to place his name on the register.

Held, affirming the judgment of the Queen's Bench Division, That the proviso in s. 7 applies to persons whose qualification is given by s. 37; and that, therefore, the applicant, not having made the declaration, was not entitled to be registered.

SANITARY ACCOMMODATION (Water-Closet).

VESTRY OF ST. JOHN'S, HACKNEY, *v.* HUTTON (1897) 1 Q.B. 210.

Public Health—Order of Sanitary Authority as to insufficient Water-closet Accommodation—Jurisdiction of Magistrate—Public Health (London) Act, 1891, s. 37, sub. ss. 3, 5.—Case stated by a metropolitan police magistrate. The decision of the sanitary authority, acting under sec. 37, sub. s. 3, of the Public Health (London) Act, 1891, that a house whether built before or after the commencement of this Act, is not furnished with proper and sufficient water-closet accommodation, is final, subject only to an appeal under sub. s. 5 to the county council. When, therefore, the owner or occupier of a house is summoned for non-compliance with a notice of the sanitary authority to provide such accommodation, a magistrate has no jurisdiction to reverse the decision of the sanitary authority, and to hold that the accommodation is not required. *Appeal allowed.*

SEWERS.

ROBINSON *v.* THE MAYOR AND CORPORATION OF THE BOROUGH OF WORKINGTON (in the Court of Appeal) (1897) 1 Q.B. 619.

Sewers—Duty of Local Authority to make Sewers—Remedy for Default—Action for Damages—Complaint to Local Government Board—Public Health Act, 1875, ss. 15, 19, 299.—Appeal from a judgment of Cave J. at a trial of the action with a jury. This was an action to recover damages for injuries sustained by the plaintiff by reason of the insufficiency of certain sewers, the property of the defendants, to carry off the sewage which passed through them. The sewer had been sufficient for the district until a number of new houses were built, which drained into the sewer, which thereby became inadequate to carry off all the sewage, some of which was barged back, and overflowed into the plaintiff's houses, and caused the injury complained of. The learned judge directed a verdict for the defendants, on the ground that the only remedy of the plaintiff in such a case was to proceed under s. 299 of the Act, and

apply to the Local Government Board, who have power to direct an inspection, and, if necessary, to order that the work shall be done ; or to apply for a mandamus.

Held, The duty of a local authority, under s. 15 of the Public Health Act, 1875, to make such sewers as may be necessary for effectually draining their district for the purposes of the Act, can only be enforced by complaint to the Local Government Board under s. 299 of the Act, and neglect of the duty does not give a right of action to an individual whose property has been injured by such neglect. *Appeal dismissed.*

PEEBLES *v.* THE OSWALDTWISTLE URBAN DISTRICT COUNCIL (in the Court of Appeal) (1897) 1 Q.B. 625.

Sewers—Duty of Local Authority to make Sewers—Remedy for default—Mandamus—Complaint to Local Government Board—Public Health Act, 1875, ss. 15, 299. Appeal from a judgment of Charles J., which was reversed. The plaintiff, a paper manufacturer, claimed a mandamus commanding the defendants to cause or to be made such sewers as might be necessary for effectually draining their district under the Act, and to give facilities for enabling the plaintiff to carry the liquid proceeding from his factories or manufacturing processes into the sewers under their control. Mandamus was granted, and the defendants appealed.

Held, The duty of a local authority, under sec. 15 of the Public Health Act, 1875, to make such sewers as may be necessary for effectually draining their district for the purposes of the Act, cannot be enforced by an action for a mandamus, the only remedy for the neglect of the duty being that given by s. 299 of the Act by complaint to the Local Government Board. *Appeal allowed.*

VESTRY OF FULHAM *v.* LONDON COUNTY COUNCIL (1897) 2 Q.B. 76.

Sewers—Public Health—Nuisance—Jurisdiction of Justices—Public Health (London) Act, 1891, s. 2, sub. s. 1.—Special case stated by justices. At the hearing of a summons before the Kensington justices, complaining of foul smells emitted from the surface sewer ventilator in the roadway which were a nuisance and dangerous to health, and that the nuisance was caused by the act, default, or sufferance of the respondents the owners of the sewer, it was contended on behalf of the appellants that the sewer was a watercourse or drain within sub. s. 1. The justices dismissed the summons on the ground that the nuisance complained of was not one coming within the Act, and that they had no jurisdiction to deal with the matter of the complaint.

By the Public Health (London) Act, 1891, s. 2, sub. s. 1, for the purposes of the Act, any watercourse or drain, so foul, or in such a state as to be a nuisance or injurious or dangerous to health, is a nuisance liable to be dealt with summarily under the Act.

Held, That this provision does not apply to public sewers, and therefore justices have no jurisdiction to make a summary order on the London County Council in respect of a main sewer, vested in the council, and forming part of the main drainage system of London.
Appeal dismissed.

REGINA *v.* VESTRY OF ST. MATTHEW, BETHNAL GREEN (in the Court of Appeal) (1896) 2 Q.B. 319.

Sewer—Drain—Liability to Repair—Sewer made without Approval of Metropolitan Board of Works or of Vestry—Metropolis Management Act, 1855, ss. 68, 69, 250—Metropolis Management Amendment Act, 1862, ss. 47, 48, 61.—Appeal from an order of a divisional court, making absolute a rule for a mandamus directing the Vestry to repair a sewer. The fact that the requisite sanction for the making of a sewer in the metropolis was not obtained from the Vestry or Metropolitan Board of Works, does not prevent it, when made, from being a sewer within the meaning of the Metropolis Management Acts, and as such vested in the vestry and repairable by them. In 1866 the owner of a block of houses in Bethnal Green laid down a pipe for the purpose of carrying off the drainage from them, which he connected with a sewer belonging to the vestry in a neighbouring street. No order for this work was given by the vestry, nor was the same sanctioned or approved by the vestry or the Metropolitan Board of Works.

Held (affirming the judgment of a divisional court), That the pipe so laid was a sewer within the meaning of s. 250 of the Metropolis Management Act, 1855, and was consequently vested in the vestry and repairable by them. *Appeal dismissed.*

VESTRY OF ST. MARTIN-IN-THE-FIELDS *v.* WARD (in the Court of Appeal) (1897) 1 Q.B. 40.

New Sewer substituted for old—Connecting Drain—Expenses—Metropolis Management Act, 1855, ss. 69, 73.—Appeal from judgment of Wills J. at the trial without a jury. The action was brought to recover the expenses incurred by the plaintiffs in constructing a drain for the purpose of draining a house belonging to the defendant, and connecting the same with a sewer of the plaintiffs. The plaintiffs, owing to the sewer being improperly constructed and in an

insanitary condition, constructed a new sewer, and served a notice on the defendant under s. 73 requiring him to make a drain connecting his house with the new sewer. Upon his refusing to do so, they did the work themselves. The learned judge was of the opinion that the liability to construct the drain connecting the defendant's house with the new sewer lay upon the plaintiffs, and gave judgment accordingly.

Held, That when in consequence of the provision by a vestry under the Metropolis Management Act, 1855, s. 69, of a new sewer in substitution for an old one, into which a house was previously drained, it became necessary to make a new drain connecting the house with the new sewer, that s. 73 of the Act did not apply, and the vestry could not under that section recover the expense of making the new drain from the owner of the house. *Appeal dismissed.*

VESTRY OF ST. LEONARD, SHOREDITCH, *v.* PHELAN (1896) 1 Q.B. 533.

"Drain"—"Sewer"—Combined Drainage—Metropolis Management Act, 1855, ss. 68, 250.

A pipe carrying the sewage of two houses, backing each other and not within the same curtilage, was vested in and repairable by the vestry under this Act, being a "sewer" within the definition of that word in s. 250. It was not proved at what date the houses or water-closets or the combined drainage were made or constructed, but they were proved to be ancient. Neither was it proved that the combined drainage was made under the order of the vestry or with the sanction or approval of the Metropolitan Commissioners of Sewers. Subsequently the owner of one of the houses disconnected his sewage, so that thereafter the pipe was "used for the drainage of one building only," within the definition of "drain," in the same section. Later a notice under s. 4 of the Public Health (London) Act, 1891, was served on the owner of this house connected with the sewer, requiring him to remedy his defective drain. This notice was disregarded, and a summons was issued. The magistrate decided that the alleged drain was a sewer, and was vested in and repairable by the vestry, and refused to make any order, but granted a case for the court.

Held, That the pipe did not, upon such disconnection taking place, become a drain repairable by the owner of the house still served by it, but remained a sewer vested in and repairable by the vestry. *Appeal dismissed.*

BRADFORD *v.* MAYOR, ETC., OF EASTBOURNE, (1896) 2 Q.B. 205.

Drain or Sewer—Single Drain draining several Houses—Liability to Repair—Public Health Act, 1875, ss. 4, 13, 41—Public Health Acts Amendment Act, 1890, s. 19.—Appeal from the County Court of Sussex. A drain-pipe passing through private property had, from a date prior to 1890, received the drainage of six houses belonging to different owners, before it joined the public sewer. The pipe having become a nuisance and injurious to health, the local authority of the district, who had adopted Parts I and III of the Public Health Acts Amendment Act, 1890, including s. 19, gave notice in writing to the appellant and the owners of the other five houses under s. 40 of the Public Health Act, 1875, requiring them to relay the said pipe. The notices not being complied with, the respondents executed the works themselves at a cost of £2 7s. 2d. to each owner. Such sum was demanded of the appellant, who repudiated liability, and on an action in the county court to recover the same, the judge gave judgment for the respondents, considering himself bound by the decision in *Self v. Hove Commissioners*. The appellant appealed.

Held, That the pipe in question was a "single private drain" within the meaning of s. 19 of the first-mentioned Act, and that the local authority were entitled to recover.

Self v. Hove Commissioners [1895] (1 Q.B. 685) followed.

Hill v. Hair [1895] (1 Q.B. 906) disapproved. *Appeal dismissed*.

REGINA *v.* MAYOR, ETC., OF HASTINGS (1897) 1 Q.B. 47.

Sewers—Single Drain draining several Houses—Liability to Repair—Public Health Act, 1875, s. 41—Hastings Improvement Act, 1885, s. 148. Section 41 of the Public Health Act, 1875, empowers a local authority, on written application made to them stating that a drain is a nuisance or injurious to health, to enter the premises, and if the drain appears to be in bad condition, or to require alteration or amendment, to give notice to the owner or occupier to do the necessary works. Section 148 of the Hastings Improvement Act 1885, in cases where two or more houses are connected with a single private drain, which conveys their drainage into a private sewer, gives the corporation all the powers conferred by s. 41 of the Act of 1875. The owner of twenty-nine houses obtained an order *nisi* for a mandamus to the corporation of the borough of Hastings to repair and maintain a drain at the back of these houses. The houses were built in 1880, and the plans submitted to the corporation showed a pro-

posed drain, into which each of the houses was to drain, at the back of the row of houses, running at one end into a common sewer in the street. The plans were approved with the exception that each house was directed to have a separate communication with the sewer in front. The houses, however, were completed with the drain as shown on the plans, and were passed as fit for habitation. The water of the wells belonging to the houses having become contaminated by leakage from the drain at the back, the corporation complained of the state of the drain, alleging that the owner was bound to repair it. No application had been made under s. 41 of the Public Health Act, 1875.

Held, That the Hastings Improvement Act, 1885, did not empower the corporation to require the owner to repair and maintain the drain, and the corporation were liable to repair and maintain it. *Order absolute*.

SLAUGHTER-HOUSES.

COLLMAN *v.* MILLS (1897) 1 Q. B. 396.

London — Slaughter-houses — Validity of By-law — Improper slaughtering of Cattle by Servant contrary to Instructions — Liability of Occupier.—Special case stated by a metropolitan police magistrate. By-laws made under the repealed Slaughter-houses (Metropolis) Act, 1874, but kept in force by s. 142, sub. s. 2 (b) of the Public Health (London) Act, 1891, making it an offence for the licensed occupier of a slaughter-house to slaughter or permit to be slaughtered sheep in the pound of the slaughter-house or in the view of other sheep. During the absence of the respondent, the licensed occupier of a slaughter-house, his foreman and slaughterman, in direct disobedience of his orders, and in order to save himself trouble, slaughtered a sheep in the pound in view of other sheep. The learned magistrate found that the acts were done without the knowledge of the respondent, and dismissed the summons on the ground that he could not be said to have permitted that which was done in his absence without his knowledge and against his express prohibition, and was not done by a person who had a general authority to manage his business. He referred to the decision in *Somerset v. Wade* (1894) 1 Q.B. 574.

Held, That the by-law was good, and that the respondent was guilty of an offence under it, for he was liable for the act of his servant, that act having been committed within the general scope of his employment, although contrary to the orders of his master. *Appeal allowed*

VACCINATION.

BRAMBLE *v.* LOWE (1897) 1 Q.B. 283.

Power of Vaccination Officer to take proceedings without authority from Guardians.—Special case stated by one of the justices of the borough of Ipswich. An information was laid by the respondent, the vaccination officer of the Ipswich Union, against the appellant, that Honora Bramble, a child under fourteen years of age, had not been successfully vaccinated. Notice had been given to the appellant, the father of the child, to procure its being vaccinated, and such notice had been disregarded. The appellant was summoned under s. 31 of the Vaccination Act, 1867, to show cause why an order should not be made directing the child to be vaccinated. The appellant called upon the respondent to show his authority to institute the proceeding. The respondent admitted that he had no special authority from the guardians of the union in this particular case, but produced a resolution of the guardians giving him general authority. On the part of the appellant it was contended that the respondent must have special authority from the guardians to institute proceedings in each particular case, and that the general authority given was invalid. It was contended for the respondent that his appointment as vaccination officer was of itself sufficient to entitle him to institute proceedings without any authority from the board at all, but that if any authority were necessary, the resolution authorizing him generally to institute proceedings against persons in default was enough.

Held, That a vaccination officer is, without any special authority in that behalf from the guardians of the union for which he acts, empowered to take proceedings under s. 31 of the Vaccination Act, 1867, for an order directing an unvaccinated child to be vaccinated notwithstanding the provisions of art. 16 of the General Order of the Local Government Board Regulations under Vaccination Acts, October 31, 1874.

SOUTHCORBE *v.* GUARDIANS OF YEOVIL UNION (1897) 1 Q.B. 343.

Neglect to procure Vaccination—Jurisdiction of Justices.—Special case stated by justices for the borough of Yeovil. An information was laid against the appellant before a justice of the peace, by whom a summons was duly granted. The summons was heard by the said justice and three other borough justices, and a formal order was drawn up and signed by two of the justices, but was not signed by the justice granting the summons. It was contended for the appellant

that sec. 31 of the Vaccination Act, 1867, makes it necessary that the justice before whom the original information is sworn, must not only sign the summons, served on the appellant, but must also hear it and sign the order, and that the appellant, being served with an order not signed by such justice, has just ground for refusing to comply with it, it being a bad order.

Held, That the justice who, upon information that a child under fourteen has not been successfully vaccinated, and that notice to procure its being vaccinated has been disregarded, signs a summons under sec. 31 of the Vaccination Act, 1867, to the parent to appear with the child before him, need not be one of the justices hearing the summons, nor need he sign the order made at the hearing. Such an objection is an objection to the vaccination order itself; it is not a ground of objection to a subsequent proceeding for the recovery of a penalty from the parent for non-compliance with the order.

HOLLOWAY *v.* COSTER (1897) 1 Q.B. 346.

Neglect to procure Vaccination—Service of Notice.—Special case stated by justices for the borough of Andover. The appellant had been summoned for having neglected to have his child vaccinated after having had due notice to do so. Upon the hearing of the summons the justices ordered the child to be vaccinated within twenty-eight days. Objection was taken on behalf of the appellant that there was no proof of service of the statutory notice under sec. 31 of the Vaccination Act, 1867, inasmuch as that notice, if delivered otherwise than personally, must be shown to have reached the person to be notified. It was admitted that the respondent made out the notice in respect of the child, addressed it to the appellant, and was left at the appellant's house, and given to a woman there, who was told it was a vaccination notice, but there was no evidence as to the woman being the appellant's wife.

Held, That the notice given under sec. 31 of the Vaccination Act, 1867, to the parent of a child under fourteen to procure its vaccination, need not be served personally upon the parent, nor, if personal service be not effected, need it be proved affirmatively that it reached him. It is a question for the justices to determine upon the evidence in each particular case whether they are satisfied that the notice reached the person to be notified.

REG. *v.* THE GUARDIANS OF THE LEWISHAM UNION (1897) 1 Q.B. 498.

Mandamus—Prosecutor—Legal right to apply for Mandamus.—The Lewisham District Board of Works applied for a mandamus

to the guardians of the poor of the district, commanding them to enforce the provisions of the Vaccination Acts generally in their district, and particularly in certain specified instances. The board of works were the sanitary authority of the district, and charged by the Public Health (London) Act, 1891, with the duty of putting in force the powers vested in them relating to public health and local government, some of which powers relate to and include the prevention of infectious diseases, including small-pox.

Held, That the board of works had no legal specific right to enforce the performance by the guardians of their duties under the Vaccination Acts, and therefore were not entitled to a mandamus.

Sanitary Science, 1897.

BY JOSEPH PRIESTLEY, B.A., M.D., D.P.H.,
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PRACTICAL SANITATION.

The more readily a drainage system can be got at in every part, the better ; but there may be, at times, cases in which costly manholes are not required or are too costly. Patents are consequently being taken out for different appliances, the use of which will obviate the necessity for these manholes. Thus, Mr. T. Kemp, of Brixton, London, has patented a new system of house drainage with the following important advantages : (1,) Costly manholes are not required to inspect or unstop drain ; (2,) Deep cuttings only required for laying main portion of drain ; (3,) Shallow cuttings only necessary for laying branch drains ; (4,) Foundations of back additions are not injured by this system ; (5,) Bends (usually used and which cannot be



Fig. 80.



Fig. 81.



Fig. 82.

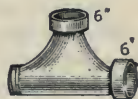


Fig. 83.

rodded) are dispensed with. In this way the whole of the drainage can be rodded from w.c. pans, sink gullies to (and through) intercepting traps, to main sewers in road, from the ground surface. The diagrams of the sweeping eye bends, junctions, and pipes explain themselves (*Figs. 80-84*).

The principle is in all the same, as explained in the "Medical Annual," 1896, p. 638, in connection with an improved form of intercepting trap (by the same Patentee), viz., an expansion of the pipes at points where rodding will be more easily carried out ; but special attention may with advantage be drawn to the sweeping eye gully bend (*Fig. 84*) for the inspection and unstopping of the drain side of gully trap, and the removal of cement which frequently oozes through the joints to the inside of the pipe when newly laid.



Fig. 84.

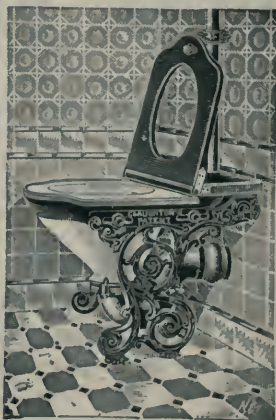
To all these various sweeping eyes, airtight covers and frames must be fixed at the ground level, and the covers (*Fig. 85*)—patented also by Mr. Kenp—have a double seal and are perfectly airtight, so that they may, if necessary, be used inside buildings without risk of sewer gases escaping. They are designed with round and square tops for cement and tile floors. Having deep frames they project above top of drain pipe which is then entirely hidden from view. The locking screw which firmly secures the top plate, upon being unscrewed, releases the cover, which is then self-raising, for the convenience of removal. The inside plate is supported on two axles and is easily removed by turning same on edge, though it cannot drop into the drain owing to the fact that it will not pass through the frame.



Fig. 85.
Gully Frame.

Messrs. Ames, Crosta & Co., of Nottingham, the patentees of the Crosta patent surface water gully (see "Medical Annual," 1894, p. 590), have introduced a new pipe joint, with a specially constructed sealing chamber which insures a perfect seal, and prevents the displaced jointing material from entering the pipes, without the use of composition rings. This same Firm has also introduced an improved manhole cover.

A new sanitary pipe joint has also been patented by Mr. R. Lowe, of Dashwood House, 315, New Broad Street, London. The pipes have no sockets—their ends are first brought close together, the edges smeared with clay to prevent the jointing material getting into the interior of the pipes, and a clamp then applied. This clamp is in the form of a mould with a hole at the top, into which is poured a durable bituminous composition which quickly hardens—after which the clamp can be removed. The joints are quickly and simply made and are efficient in that they can be tested up to 40 lb. to the square inch pressure. The pipes can be made circular or (what is better) egg-shaped, and can be jointed on the surface of the ground before being laid in their trenches—the joints being elastic, and owing to the absence of sockets, with greater ease more evenly laid.



Messrs. Claughton Bros., of Leeds, *Fig. 86.*—Adaptable Suspension W.C. have introduced their adaptable suspension wash-down w.c. (*Fig. 86*),

the pan of which is suspended on two cast-iron brackets so as to be clear of the floor, which can, consequently, with ease be swept and washed as required—the object aimed at being to minimize the dust collection as much as possible. The trap and pan connections are under water-line, ensuring, thereby, a perfect joint, whilst the trap or bend can be readily turned to any angle, and being generally of lead can be securely connected to the soil pipe. The w.c. possesses a large water surface and a deep seal. This Firm has patented also their “Niagara” water-waste preventor (*Fig. 87*).

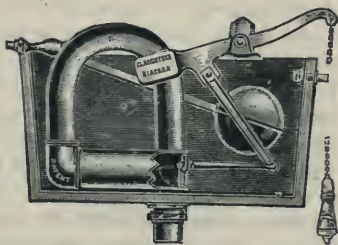


Fig. 87.—Niagara Water-waste Preventor.

Messrs. Winser & Co., of London, have introduced a flushing-rim grease gully trap, which is stated to be a perfect self-cleansing appliance, and the working of which will be readily understood by reference to the section given in the accompanying figure (*Fig. 88*). It is to be used in conjunction with an automatic flushing tank, and is made in two pieces—the upper part turning in any direction to suit the connection from the automatic flushing tank, and the lower part (or earthenware trap) also in any direction to suit the drain. The patent consists in the improved flushing rim, which causes the water to flush efficiently, breaking up the solid matter, cleansing the trap, and clearing out the drain generally.

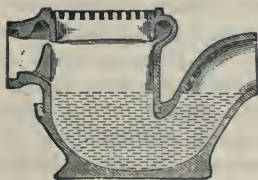


Fig. 88.

Flushing Rim Grease Gully Trap

Messrs. Winser & Co. are also the patentees for a new form of w.c. which is called the “Puro.” The joint between the earthenware trap and leaden or iron soil pipe is made by forming a complete galvanized iron collar, concaved on the inside, which passes round the joint, and is then tightened up by small gun-metal bolts. The connection is below the water line, and being submerged, must be absolutely tight against the leakage of sewer gas. The pan contains a pool of water $7\frac{1}{2}$ in. by 6 in. (see *Fig. 89*).

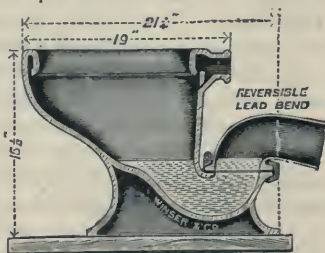


Fig. 89.—The “Puro” W.C.

The Albion Clay Co., of Woodville and London, have patented a new street gully—the primary object of which is to arrest all road detritus and other matter from escaping into the drain or sewer. The water has to descend into the body of the gully and rise up a vertical shaft over a diaphragm, which action causes the sand, etc., to be precipitated. Paper, leaves, straw, etc., float to the surface, and cannot enter the sewer or drain. The gully has a deep water seal, and cannot become untrapped by evaporation during the hottest weather, whilst its outlet is well below the crown of the road, so that it cannot be broken by steam rollers, etc. In case of stoppage easy access is obtained direct from the surface of the road through the hinged door, the inspection hole being hermetically sealed with a screw plug. These gullies are made oblong or circular shaped, and of iron or earthenware in any size.

The same Company have patented

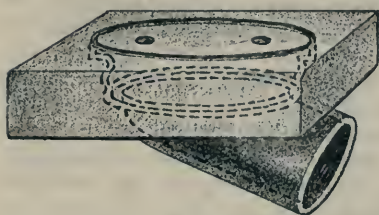


Fig. 90.

air-tight screw-plug inspection blocks (*Fig. 90*) the screw stoppers of which are made air-tight by placing a good fillet of Russian tallow in the socket before screwing up. They are used at the ground level, the plunging arms or means of access being brought up and capped with a block with screw stopper.

Messrs. Duckett and Sons, of Burnley, Lancashire, have, in addition to an improvement in connection with their automatic slop water closet, whereby better access is provided to the automatic tipper, and expense saved in building brickwork round the box as heretofore, patented during the year a wash-down closet named "The Clencher." This closet is in pedestal form and has a trap with a 2 in. seal, a novel flushing rim, and a large water surface (7 in. by 5 in.) in the basin. Its advantages are: (1.) Exceptionally good flush even with two gallons of water, owing to the two oblique channels which connect the flushing rim with the fall pipe; (2.) No rubber required for nozzle and no brackets to carry the seat, which is hinged to a back-rail (bolted to the ware). This w.c. was awarded a medal at the 1897 Sanitary Exhibition at Leeds.

The Century w.c., with siphonic discharge, of Mr. G. Jennings, London (*vide* "Medical Annual," 1896, p. 635), is proving in practice most successful, its simplicity of action being its strong point. Mr. Jennings has patented during the last year a duplex bath supply valve,

which has only one handle, but which is so ingeniously arranged that it is impossible to turn the hot water on first—an important safeguard against scalding, *e.g.*, in connection with Public Institutions, Asylums, etc. The handle can only be turned one way. A further advantage is that the contrivance really forms a mixing chamber, whereas, with two distinct outlets, the mixing is by no means so perfect. The valves can be arranged, if necessary, with a loose key and in such a manner that they can be worked from outside the bathroom. The appliance is, of course, a useful one for private residences as well as for public institutions.*

Messrs. Bostel, of London, have introduced during 1897 the Excelsior urinal, its simplicity (though peculiar form) giving it the following advantages: (1,) Occupies little space, and can be fitted as an angle, or in series stall, or as a radial form; (2,) Has an accelerated flush, *i.e.*, force increasing as it reaches the lower part of urinal; (3,) The basin and stall are in one piece of ware (marble, slate, or earthenware), are frost and acid proof, and unbreakable; (4,) Users can stand up close to the basin without fear of their boots or clothes being splashed; (5,) The basins and stalls can be readily removed and easily disconnected for access purposes, the connecting or disconnecting of service pipes, etc., in the rear.

Disinfectants.—Many attempts have been again made during the past year to discredit the time-immemorial method of sulphur disinfection by fumigation—the germicidal value of sulphur fumes being (it is stated) practically a minus quantity. Bacteriological evidence is brought forward to show that certain germs are not, or are at least but slightly, affected by exposure to sulphur fumes, but the practical experience of centuries is made to count for nothing and the important fact forgotten that in all probability the value of sulphur disinfection depends upon the after-cleansing and ventilation of rooms that is so necessary owing to the tenacity of the smell of the sulphurous acid. Many practical Health Officers can prove that return-cases of infection, after sulphur fumigation and due to its inefficiency, are so few, that they may be disregarded—a fact that ought to weigh well with Sanitarians before condemning a well-tried friend!

“What method of aerial disinfection, other than by sulphurous acid, is to be used”? is a question that naturally suggests itself, and that has been brought prominently forward lately at Congresses, Societies, etc. A panacea has, in the opinion of some, been found in the so-called

* It is, however, of some importance to turn on hot water first, as otherwise the bottom of the bath does not become warm properly.—Editor, “*Medical Annual*.”

formalin, which in the form of dry tablets can be used in, *e.g.*, the Alformant lamp. By means of this lamp it is possible to regulate the precise volume of gaseous formalin required for any room capacity and for any degree of air sterilization or disinfection, 1 tablet being sufficient for the sterilization of one thousand cubic feet of air, and 10 tablets for the effectual disinfection of the same volume. Bacteriological experiments are forthcoming in quantity to show that formalin is a germicide of great value and withal harmless to man—an important

proviso that is being claimed recently for many other new disinfectants as well. This use of formalin as an aërial disinfectant has been tried before, whilst formalin as a food preservative is well known.

The Alformant lamp (*Fig. 91*) is the patent of Schering, brought out for the gasification of dry formalin by the Formalin Hygienic Co., Limited, of 9 and 10, St. Mary-at-Hill, London, and consists of a cylindrical mantle heated below by a spirit lamp (with suitable wick) and in the upper part of which is a vessel into which the tablets are placed. The combustion of the methylated alcohol gives off CO_2 and watery vapour which escape through slits in the upper end of the vessel, and which in their passage take up the formalin vapours given off by the heating of the tablets.

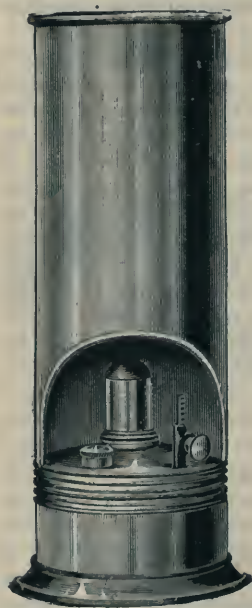


Fig. 91.—Alformant Lamp.

Chemically considered, formalin is a watery solution of 40 per cent. formaldehyde gas—the gas which is given off when the solution is exposed to the air having no deleterious action on wool, silk, cotton linen, leather, hair, etc., and little (if any) upon colours. It does not attack iron and steel. NH_3 neutralizes formalin, forming the compound formamide.

The difficulties hitherto have been to find a method of practically utilizing this newly-introduced gaseous disinfectant. Thus, when a commercial (watery) solution of formalin is heated and the concentration exceeds 40 per cent., a polymerization of the formalin occurs with a precipitation of paraformaldehyde which burns, if the heat be continued; whilst a solution of formalin in methyl spirit (called holzin) spatters badly and large enough quantities of formaldehyde vapour

cannot be developed therefrom in a short space of time. Further, the superheating of formaldehyde solutions under pressure of three atmospheres is risky and expensive. These practical difficulties, however, appear to have been surmounted in the form in which this aerial disinfectant is now used, viz., by means of tablets of solid polymerized formalin (or paraform or tryoxymethylin, as it is also called). Each tablet is 15 grains, and may be vapourized by the so-called Alformant lamp.

The alternative method of generating the gas (Trillat's) is by means of a calcium chloride solution of the gas in an Autoclave. The gas is dissolved in a solution of calcium chloride, and heated under pressure, with the result that practically dry formic aldehyde is evolved, and this does not polymerize. The Autoclave is a container constructed to bear a high pressure, and is provided with a pressure gauge and thermometer. When the pressure gauge shows 40 lbs., the gas is evolved and escapes through a fine copper tube, which is generally thrust through the keyhole into the room to be disinfected, the Autoclave (which needs attention) being kept outside.

Whether or not formalin will supplant sulphurous acid as a gaseous disinfectant remains to be seen; and whether or not, should such supplantation take place, the results will be equally satisfactory is for the future to decide.

As an antiseptic, its use in surgery and medicine may be mentioned—the best form for this purpose being a fine powdered formalin gelatin, known under the name of “Dr. Schleich's glutol.” When placed on wounds it forms, in a short time, a firm scab, and the antiseptic is liberated whenever the glutol is acted upon and decomposed by organic and organized ferments.

The testings (bacteriological and chemical) carried out by Dr. Rideal and Mr. Sewell during 1897, go to show that “Okol” (a preparation of the Sanitas Company, *vide* “Medical Annual,” 1897, p. 617) has antiseptic and germicidal characters of the highest order, though it is non-poisonous to man. Okol is now shown to be an emulsion of an oil consisting chiefly of acid hydrocarbon derivatives of the benzene series, resulting from the destructive distillation of coal and other carbonaceous matters at a high temperature.

Messrs. Boake, Roberts and Co., of Stratford, London, who introduced the liquid sulphur dioxide (*vide* “Medical Annual,” 1894, p. 585) have recently brought out a new disinfectant—a derivative from phenol—which they have named “Rozol.” It is stated to be a high-class antiseptic, disinfectant, and deodorizer. It is miscible with water, and is made also in the form of powder

(5, 10, or 20 per cent. strength), the mineral absorbent being of a specially light nature.

Special attention has again been drawn to the value of a 10 per cent. solution of chloride of lime as a disinfectant by the fact that Dr. Sims-Woodhead advised its use in connection with the 'typhoid-infected reservoirs and water mains at Maidstone. The mains were emptied of their water and a 10 per cent. solution of chloride of lime passed through them, whilst eight tons of chloride of lime were used for disinfecting the reservoirs. In this connection it may be mentioned that the United Alkali Company, Lim., of Liverpool, have introduced a disinfectant called "Chloros" (hypochlorite of soda) containing 10 per cent. of available chlorine, without any insoluble residue, which would be likely to stop up drains, etc., whilst the cheapness and bacteriological efficiency (according to Experts) of hypochlorous acid and hypochlorites must not be forgotten when considering the question of practical disinfection. "Chloros" is stated to be an active germicide in strength of 1 in 200 (Klein).

The value of saturated steam as a disinfectant, and its superiority over superheated, was practically admitted by Mr. Washington Lyon (the patentee of the superheated machine) at the Leeds Sanitary Congress, when he stated that all were agreed as to the advantage of the now generally-preferred saturated steam. The principle involved in steam disinfection is well known and universally acknowledged, but during the year Dr. Alvah S. Doty, of New York, in connection with the Port work of that City, has introduced what he states is an improved machine, in which he produces a partial vacuum prior to the admission of steam into the chamber by means of steam exhausts, producing a vacuum of twenty-two inches in one minute—*i.e.*, a strong current of steam from the boiler (with 65 lbs. to the square inch pressure) passes by the mouth of a pipe communicating with the interior of the chamber. There is also provided a fresh air inlet (one and a half inch in diameter) connecting the interior of the chamber with the outer air and furnished with a stop valve. The whole apparatus is enveloped in a non-conducting jacket of magnesia asbestos, which absolutely prevents heat radiation. The principle of these improvements had already been acknowledged, and similar improvements actually already adopted by the patentees and makers of the well-known machines, *e.g.*, Equifex, Washington Lyon, etc.

Current steam (with and without pressure) is preferred by some, and Drs. Délépine and Thresh have been working out machines on this principle. Where the pressure is slight, the temperature is

unfortunately but little above 212° F., but the expenses of such a machine are considerably lessened: the machine can, in fact, if required, be made in a portable form, enabling the disinfecting apparatus to be brought to the infected houses, and the necessary disinfection carried out there, but care must be taken before an authority discards the use of high-pressure steam.

In connection with disinfectants, Dr. Rideal has made during the past year a series of important experiments as to the value (if any) of the so-called medicated or disinfectant soaps. The practical outcome of the experiments is that many of the so-called antiseptic soaps belie their names—the antiseptic being destroyed or rendered inert by chemical combination with the basis of the soap used, etc. As a corollary, the fact is forced upon us that after all plain soap and water is the best disinfectant, and cleanliness the sole sanitary requirement.

Fleming's disinfectants—the so-called camphylene—are made in the solid, liquid, and powder forms, and are non-poisonous, non-corrosive, and non-staining. The active principle is evaporated continuously at ordinary temperatures when exposed to the air, and the disinfectant is, therefore, used as a tablet for hanging in rooms, on the person, or (in the form of moth papers) amongst clothes. The preparation that is most recommended is the camphylene cream—a fluid disinfectant of great strength, yet agreeable in odour. It possesses, of course, all the properties and advantages of camphylene as to its non-poisonous, non-corrosive, and non-staining properties, and is made sometimes mixed with ammonia.

Ptomaine Poisoning, etc.—Several cases of ptomaine poisoning in connection with meat during the year have drawn fresh attention to the subject of tinned foods. Dr. J. Brown, in a paper on the subject, read before the Sanitary Institute at Leeds, stated that over 580,000 lbs. of canned goods (meat, fish, fruits, etc.) were consumed daily in this Country, and that in the case of the popular tinned salmon two millions of people partook of it daily! The cases of ptomaine poisoning are, therefore, apparently few and far between, though it must be remembered that a large number of cases of slight illness due to the consumption of tinned meats may not be recorded. The ptomaines are alkaloids of bacterial origin and are produced (1,) *Before* or *after* the meat is canned, or (2,) *After* the can or tin is opened and its contents exposed to the atmosphere. In cases of canned fruits, the *vera causa* of trouble appears to be poisoning from metallic impurities, *e.g.*, tin, zinc, lead; and, consequently, glass vessels instead of tins have been suggested. A Warrington Syndicate, acting upon this suggestion,

now make hermetically sealed glass jars (vacuum) with glass covers (no metallic caps or covers used) and made in any shape or size. A rubber washer fits into a groove round the neck of the jar or bottle, keeping the contents absolutely airtight, by means of the cover which is readily removed by a special key, or point of a knife, pin, pen, etc. The jars and covers can be used again and again, no solder is required, and the flavour and colour of the contents (which are readily visible) are preserved. The jars are filled, and then hermetically sealed by one or two processes, viz. (a,) By heat, or (b,) By cold (exhaust). Much the same principle is adopted by Mr. Charles Melin, of 37, Crutched Friars, Mark Lane, London, in connection with his patented

new sanitary milk jars, which are made of pure white flint glass of heavy substance and almost unbreakable (*Fig. 92*). These jars can be readily cleaned, and, the stopper being made in glass, no contamination can take place from metal of any kind, and are far superior to ordinary tin milk cans.

It has been suggested that, in view of the evidence submitted by Dr. Brown and others, the Government should be urged to hold an enquiry into the matter. Such an enquiry would bring out the facts of the case, and the reasoning *pro* and *con* for glass (or aluminium) being used in place of tin, the necessity of having the date of canning legibly stamped on the bottom of the can, the tin used for tin-plating containing not more than 1 per cent. of lead or more than 10 per cent. of solder, the

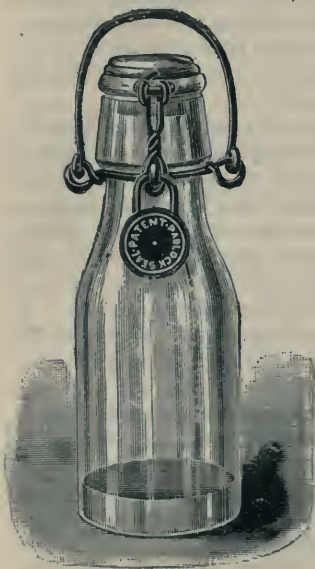


Fig. 92.—Sanitary Milk Jar.

importance of the soldering being on the outside of the can, etc.

Several cases of illness attributable to coal gas have been reported during the year, and attention has been drawn to this form of poisoning (coal gas) with the consequent insistence upon the importance of testing all gas pipes and fittings by pumping air into them and watching the result upon a pressure gauge. This cause of ill-health is often neglected.

Wood Paving.—The use of wood paving is becoming more acknow-

ledged and more generally used by Surveyors. It is admitted now that, though asphalt is undoubtedly the best (with the single exception of its slipperiness at times and consequent danger to horses), the hard woods from Australia (Jarrah, Karri, etc.), are to be recommended *practically* for the following (amongst others) reasons given by the surveyor of St. Martins-in-the-Fields, London : (1,) The life of a hard wood varies from five to twelve years ; (2,) It is less noisy and less slippery than any other kind of pavement ; (3,) It is sanitary, if the subjoined particulars are attended to : (*a*,) Attention to the contour of the road (with a natural fall to the gullies) and close jointing of the blocks ; (*b*,) Careful selection of the wood, and preliminary treatment of the blocks with a preservative (applied in *vacuo*) ; (*c*,) Frequent repairing and renewals of blocks, and constant scavenging.

GENERAL REMARKS.

Sewage Purification.—The year 1897 will ever be memorable on account of the prominence given during it to the subject of the Bacteriological Purification of Sewage. The personal experience of such an authority as Mr. W. J. Dibdin, late chemist to the London County Council, has been published to the world in a book on the "Purification of Sewage and Water"—a work dealing only with principles, but not the less valuable. The principle is established that organic matter is destroyed by microbes, which rapidly increase under favourable circumstances, *e.g.*, the presence of fresh air (or oxygen) to prevent putrefaction, and a suitable *pabulum*, upon which the microbes can feed. Complex organic matters containing chondrin, gelatin, albumin, starch, etc., are broken up by these microbes and simpler combinations of elementary bodies result, *e.g.*, the C becomes CO_2 ; the H, H_2O ; and the N, N_2O_3 or N_2O_5 (nitrous or nitric acid). Nature's method of purification is simplicity itself, and brought about by small bodies (varying from $\frac{1}{5000}$ to $\frac{1}{25000}$ inch in diameter), which are really plants, depending for their efficacy upon their life and activity.

The sewage to be purified is in the first place strained or screened, and then passed on to filters of coke breeze, crushed clinker, ballast, sand, gravel, etc., the value of the filters being twofold, viz. : (1,) As mechanical separators ; (2,) As oxidizers of organic matters, whether in suspension or solution, by means of living organisms. The presence of air is so important that these filters have perforated walls, so that the whole substance of such filters can be aerated in all directions and at all depths, and must be used so as to admit of

definite periods of rest. Thus, each filter bed may be so arranged (as mentioned by Mr. Dibdin) as to take one hour to fill, two hours to rest full (whilst the microbes do their work), one hour to empty, and three hours to remain empty (so as to ensure thorough aëration), whilst its surface must be raked over daily. The index of efficiency of a filter is to be found in the amount of nitrites or nitrates to be discovered in the effluent—the more nitrites or nitrates, the better filtration, and *vice versâ*. Indeed, this chemical examination of the *average* daily sewage and effluent is a *sine quâ non*, and shows the quantities of oxidizable organic matters, the nitrites and nitrates in the effluent, and the amount of matters held in suspension—such details being most useful in enabling a correct judgment to be formed as to the efficiency or otherwise of the purification process. Further, the quantity and nature of the suspended matters is obtained by collecting on a micro-filter and examining; whilst the filter beds may be graduated from coarse grains, through fine grains, to sand, and the effluent (after passing through these) be passed over land. Such is the Barking and Sutton system of Mr. Dibdin.

The Exeter system (tried also at Yeovil), carried out by Mr. Donald Cameron (the Borough Surveyor), is on the same principle, viz., the biological purification of sewage, and is effected in closed tanks, wherein putrefaction plays a prominent part, and from which the effluent is passed over coke breeze filters and then finally (if required) over land. During the past year an Enquiry has been held by the Local Government Board at Exeter, and the result of such Enquiry will be awaited with eagerness by all sanitary authorities interested in sewage purification, as the simplicity, financially and otherwise, of the biological system being admitted, all that now remains to show is whether or not it will work out as satisfactorily in practice on the large scale, as it has theoretically in the laboratory and practically on a small scale.

Cameron's method (Exeter and Yeovil) depends—at least at first—upon the action of anaërobic microbes, acting in the dark and in the absence of air in the so-called septic tanks; whereas Dibdin's method (Sutton and Barking) depends for its efficiency upon the aërobic microbes, acting only in the presence of fresh air and light (*i.e.*, oxygen). Cameron's method in the tanks becomes Dibdin's method in the filter—the former a reducing or deoxidizing action, the latter a purely oxidizing one, with the conversion of ammonia into nitrites and finally into nitrates (the nitrous and nitric acids uniting with the bases present respectively). The filtering process in both requires a plentiful supply of oxygen, and to obtain this the filtration must be intermittent—a

condition of things brought about, in Dibdin's method, by hand labour; but in Cameron's, automatically by a patented simple alternating gear.

It is clear, therefore, that, where this principle of sewage purification by bacteria is relied upon, the addition of antiseptics to the sewage is worse than useless—at least in so far as lime, carbolic acid, etc., are concerned, though Mr. Dibdin is of opinion that permanganic acid, which is simply an oxygen-carrier, and acts by destroying organic matter without killing the microbes mentioned above, may with advantage be added. Ordinary disinfectants simply exert an inhibitory action over the microbes, which are the useful little scavengers of sewage disposal, and require, if anything, rather to be helped by means of oxygen, fresh air, light, or otherwise, further details of which will be forthcoming as experience increases and the practical working of this bacterial system of sewage disposal is more studied. These useful and beneficent microbes must of course be distinguished from those that cause disease, and against which it is the duty of Sanitarians to fight vigorously and incessantly; indeed, there is setting in a reaction amongst scientific workers on the question of germs or microbes, and the microbomania of a few years ago is disappearing, or at least undergoing modification.

The future of the bacterial sewage purification is assured, and Sanitarians and others will look forward with anxiety and impatience to reports and further information on the subject—the year 1897 having simply seen the principle well established.

Public Elementary Schools and the Spread of Disease.—The Local Government Board (Medical Department) have issued an important Memorandum during the past year on the circumstances under which the closing of public elementary schools, or the exclusion therefrom of particular children, may be required, in order to prevent the spread of disease without causing any unnecessary interruption of the work of education. The Board points out that the closing of schools is a measure to be seldom enforced, except under circumstances involving imminent risk of an epidemic, nor even then as a matter of routine, nor unless there be a clear prospect of preventing the propagation of disease, such as could not be looked for from less comprehensive action. Article 88 of the Code of Regulations approved by the Lords of the Committee of Council on Education, renders it compulsory upon managers to *at once* comply with any notice of the Sanitary Authority (or of any two members) acting on the advice of their Medical Officer of Health, either to close the school or to exclude certain children from attendance, with a view to preventing the spread of disease, or

any danger to health likely to arise from the condition of the school, *e.g.*, insanitary or otherwise, with right of appeal to the Department, after complying therewith. This procedure is to be put in force chiefly for diseases that spread by infection *directly* from person to person, *e.g.*, measles, scarlet fever, diphtheria, whooping cough, epidemic influenza, small-pox, r  theln, but also for enteric fever or diarrh  a, if necessary.

The importance of children from infected houses being excluded so as to prevent them attending school in a latent form, or in an unrecognized stage, of the disease, or to prevent infection by clothes, needs only to be mentioned to be acknowledged; and as a rough working rule it may be stated that schools ought to be closed where there are many undiscovered or unrecognized cases, or when the known centres of infection are very numerous, and where too much intercommunication elsewhere than at school does not take place, more especially where exclusion of separate children is not successful owing to mild and unrecognized cases. Closure, it is to be remembered, is an extreme measure, however.

As some diseases are not notifiable to the Sanitary Authorities, it is important that the school attendance officers, and schoolmasters and mistresses, should notify cases amongst scholars of infectious diseases and others, *i.e.*, the notification of absentees, and should look out for symptoms in epidemic times (*e.g.*, heat of skin, shivering, headache, languor, vomiting, rashes, sore throats, etc.), so that precautions may, accordingly, be taken in the way of excluding children from school, etc. The medical officer of health is clearly the proper person to advise as to the precautions to be taken, length of time during which children are to be excluded from school, or schools closed, etc., and the Local Government Board have laid down that where schools are closed, the medical officer's reports to his Authority (stating grounds and reasons for closure) shall be regarded as special reports, and consequently copies shall be sent to them and to the County Council of the District within which the school is situated.

The above conditions apply only to public elementary schools, and not to Sunday or other private schools (these latter being dealt with under the Public Health Acts as contravened).

The issuing of this Memorandum is opportune at the present time, as the subject of the spreading of infectious diseases through the medium of schools is coming rapidly to the fore, and statistics are fast accumulating, which show that such inter-relationship between infectious diseases and schools does exist. Such statistics may be necessary to convince the lay mind, but are hardly needed for medical officers who,

if of any experience in practical sanitary work, must have had many opportunities of proving for themselves the truth of such inter-relationship.

The examination of scholars individually and the exclusion from schools of those suffering from, or sickening for, an infectious disease, together with the other inmates of the same house, with a systematic notification (and subsequent medical examination) of *all* absentees to Health Officers, are important steps towards the prevention of the spread of disease, and may prove all-sufficient in the case of some, though school, or class, closure is certainly indicated, and required, in the case of others, of the infectious and contagious disorders, and under the conditions as stated above.

Diphtheria Statistics.—Diphtheria increases steadily, and no satisfactory explanation (beyond the influence of schools) is yet forthcoming. The importance, however, of the antitoxin treatment is shown in a valuable (second) Report signed by eight (out of nine) medical superintendents of the various Hospitals of the Metropolitan Asylums Board,* and published during the year, giving an account of the use of antitoxin serum in the treatment of diphtheria during 1896 (*vide* also "Medical Annual," 1897, p. 624). Of the total cases, 71·3 per cent. have been treated with antitoxin with the following results, to which are added, for comparison, the cases treated in 1895 (also partly with antitoxin), and those in 1894 (without antitoxin):—

DAY OF DISEASE ON WHICH TREATMENT WAS COMMENCED.	MORTALITIES PER CENTUM.				
	1896		1895		1894
	All Cases.	Antitoxin Cases.	All Cases.	Antitoxin Cases.	All Cases. No antitoxin.
First day - - - -	4·7	5·2	11·7	4·6	22·5
Second day - - - -	12·8	15·0	12·5	14·8	27·0
Third day - - - -	17·7	21·9	22·0	26·2	29·4
Fourth day - - - -	22·5	27·8	25·1	33·1	31·6
Fifth and after - - -	24·6	31·7	27·1	35·7	30·8
Total - - - -	20·8	25·9	22·5	28·1	29·6
Tracheotomy Cases - -	41·0	40·6	—	—	70·4
Laryngeal Cases - -	29·6	28·8	—	—	62·0
Post-Scarlatinal Diphtheria	5·0	5·9	—	—	—

* Two thousand seven hundred and sixty-four cases were treated with antitoxin during 1896, and Dr. Gayton, of the North Western Hospital, is the only superintendent who does not sign the Report.

Of the total cases (antitoxin and others), the percentage mortalities may be further sub-divided as follows :—

		1896†	1895†	1894
Under five years of age	...	30·2	34·2	47·4
Between five and twenty years of age	...	15·2	15·8	20·5
Twenty years and over	...	1·9	2·5	6·5

As to complications, there is an increase in their numbers for 1896 as compared with 1895—such increase being more apparent than real, and due to the fact that the statistics for 1896 are more exact than those of 1895, whilst with the lessened mortality, or even the mere prolongation of life, *cæteris paribus*, an increase in complications was to be expected, *i.e.*, more time is allowed for such complications to be developed.

COMPLICATIONS (all cases).			COMPLICATIONS (all cases).	
	1896	1894	1896	1894
Albuminuria ...	53·4	24·1	Pneumonia (lobar) ...	0·5
Nephritis ...	0·5	1·2	Pneumonia (lobular)	2·5
Paralysis (various)	21·3	13·2	Relapse ...	1·6
				0·9

A rash in connection with the antitoxin treatment was found in 35·2 per cent. and was generally of an urticarial, erythematous, or scarlatinal type ; whilst joint pains were noticed in 6·5 per cent., abscesses at seat of puncture in 1·2 per cent., and pyrexia (with or without rash or pain) in 19·8 per cent. of the cases.

Anthrax.—Another important Report published during 1897 is that of the Anthrax Committee, who have come to the following conclusions :—

(1,) Anthrax is a disease which attacks man and several of the lower animals (*e.g.*, horse, cow, sheep, goat), and is transmitted by inoculation, or by breathing and swallowing—the former known as external anthrax or malignant pustule, the latter as internal anthrax—from wool (including camel hair and goat hair), hides and skins, horse hair and bristles ;

(2,) The incubation period is short—not over three days ;

(3,) Theoretical preventive measures consist of (a,) Exclusion of infected material from use, (b,) Disinfection, and (c,) Employment of insusceptible persons, but are practically impossible to carry out ;

(4,) Practical preventive measures are suggested as follows: (a,) Employment of persons with requisite experience ; (b,) Exclusion of workers with the slightest open sores ; (c,) Treatment of suspected materials by washing or disinfecting ; (d,) Special ventilating precau-

† + Taking only antitoxin treated cases, the figures are : Under five years of age, 1896, 32·2 ; 1895, 37·4. Between five and twenty years of age, 1896, 20·8 ; 1895, 21·3. Twenty years and over, 1896, 4·2 ; 1895, 3·9.

tions, *e.g.*, dust removal, adequate air space, etc. ; (e,) Cleanliness of rooms, persons, and clothing.

Leprosy.—The International Conference on Leprosy at Berlin have reported during the past year that the leprosy disease is due to the entrance into the blood of the bacilli lepræ of Hansen and Neisser. The disease exists only in man, is contagious (and not a hereditary disease), and, therefore, the sufferers require to be carefully isolated—compulsory isolation following notification, and careful medical inspection. Considering the scientific standing of the members and experts of this Commission, their conclusions are noteworthy, and settle once and for all the life history of the disease and the means at our disposal for combatting its extension.

Plague.—The International Sanitary Conference, or Convention, at Venice, has also reported during the year to the following effect :—

(1.) The necessity for inter-governmental notification (by telegraph) of plague, with account of the progress of the disease, prophylactic measures adopted (inspection, isolation, disinfection, etc.), together with detailed statement of action taken (permissive) as to exportation of susceptible articles, *e.g.*, rags, body linen, clothes and bedding, used sacks, carpets, embroidery, skins (raw, fresh, untanned), animal *débris*, human hair, etc. ;

(2.) The importance of a *daily* medical visit of all persons on board vessels leaving infected ports outside Europe with efficient disinfection of articles on board, etc., and power of keeping back any person or persons suspected of sickening for the plague ;

(3.) Special details as to pilgrim ships, with a particular code of rules as to pilgrimages both to the Hedjaz and up the Persian Gulf (before and during the voyage), with suggestions of necessary improvements at the various sanitary stations to which pilgrims have to go in the Red Sea ;

(4.) Special regulations as to terrestrial frontiers, the Red Sea, and sea-routes generally ;

(5.) Special measures to be adopted when plague breaks out in Europe, whether by land or sea, *e.g.* : (a,) Inter-notification as to the disease, and measures of prevention taken ; (b,) Particular measures to be taken in connection with infected, suspected, and healthy vessels respectively at various ports of arrival.

The incubation of plague is limited to ten days, and frontier restrictions as to quarantine, etc., are left to the various Countries, States, etc., concerned.

Notification, medical inspection, and disinfection (together with improved sanitation generally) are the keynotes to the labours of the

Venice Convention, and in this connection the 1897 Milroy Lectures of Dr. Collingridge (sounding the death-knell of the old quarantine) are interesting. In these Lectures the life history of quarantine is told, its legislative aspects described, and its final death related; whilst a full account is given of the means of defence against disease importation now in the hands of all Port Sanitary Authorities and their Medical Officers of Health, viz., notification, medical inspection, disinfection and sanitation—results which are practically the outcome of various Conferences amongst the Representatives of Different Nations, *e.g.*, Vienna, 1874; Rome, 1885; Vienna, 1892; Dresden, 1893; Paris, 1894; Venice, 1897.

Vaccination.—No action has yet been taken by the Government to give effect to the recommendations offered in the Report of the Royal Commission on Vaccination (*vide* "Medical Annual," 1897, pp. 618, 619), though Sir T. Thorne and Dr. Copeman, after visiting the continental vaccine centres, have reported favourably on glycerinated (not vaserinated or lanolinated) calf vaccine lymph, and recommend that it be distributed from the National British Vaccine establishments in airtight glass receptacles. The general adoption of calf lymph and the abolition of the arm-to-arm vaccination (except amongst members of the same family) would be an important step in the right direction, and go far to lessen the opposition of a large section of the anti-vaccinators. The same may be said as to re-vaccination, which is equally as important, as shown by the evidence submitted to the Royal Commission, who, however, whilst stating their belief in the value of primary vaccination, make no recommendation as to legislation in regard to revaccination—an anomalous state of affairs pointed out during the year by the Epidemiological Society of London in the form of a special resolution carried unanimously at their meeting.

Vaccinators and anti-vaccinators are prepared for action when the subject of vaccination comes before the Houses of Parliament (if it ever does), but it is doubtful what the result will be.

Typhoid Fever and Water Analysis.—Serious epidemics and outbreaks of typhoid fever at Maidstone, Lynn, Clifton, and Belfast, have drawn great attention to water supplies and to the care needed to safeguard them from pollution. Prevention is always better than cure, and if the epidemic scourges of the past year give rise to improved water supplies, not only in the Towns concerned, but also amongst Sanitary Authorities generally, they will prove to be real blessings. That the water supplies used by certain Sanitary Authorities are far from satisfactory, goes without saying, and the difficulties that arise from water supplies being in some cases in the hands of private

Companies (who seem to have an objection to interference in the way of inspection, etc., by the officers of a Sanitary Authority) appear to be well nigh insurmountable. The Stockport Corporation, as a Sanitary Authority, is suggesting petitioning Parliament for compulsory powers of inspection and examination of water supplies by their officers, and such powers might with advantage be granted to all Sanitary Authorities. It remains, however, to be seen what view Parliament will take of the subject. The relative values of chemical and bacteriological analyses of water have naturally been also much discussed during the year, with the result that both the chemist and bacteriologist are apparently necessary, and must give their analyses of a water before a sound conclusion can be arrived at. In certain cases, a chemical analysis alone would fail; in other cases, a bacteriological. One thing, however, appears certain, and that is the very greatest importance to be attached to the *periodical* examination and inspection of the sources, and the knowledge of the history, of a water supply, together with the protection of the area round such sources.

Messrs. Burroughs, Wellcome & Co., acting on the suggestion of a County Medical Officer of Health, have introduced a water analysis case of mahogany, ten by twelve inches and five inches deep (*Fig. 93*). All the apparatus and reagents needed for the carrying out of a satisfactory analytical examination of waters at the source of supply are contained in the case, and consists of Nessler's reagent (capsules), silver nitrate, potassium chromate, acid sulphate of sodium, potassium iodide and starch, zinc dust, soap, potassium ferrocyanide and permanganate (all in soloidal form), a boiling flask, glass cylinders, evaporating dish, stirring rods, spirit lamp, glass funnel, etc., etc. By means of such

a case, waters can be readily separated into good, bad, or indifferent groups, by a simple examination made by a Medical Officer of Health or other Official; and a more elaborated analysis (bacteriological and chemical) can then be carried out by an expert, as may be required. There can be but little doubt that analyses of water supplies at their sources, in transit, in reservoir, before and after filtration, in the course of, and at the point of, delivery are



Fig. 93.—Water Analysis Case.

and after filtration, in the course of, and at the point of, delivery are

important, but must go hand in hand with inspections of the water supplies at the same points mentioned.

Water Filtration, etc.—As to filtration, the so-called sand filtration is satisfactory, if carefully carried out; but a new method of sand filtration (the installation occupying only one-eighth of the space of an ordinary sand filter) has been brought forward during the year. It has been patented under the name of "the Fischers' System," and consists of vitrified sand (sharp sand and finely pulverized glass, baked and hardened under very high temperatures, *e.g.*, 1000 to 2000° F.) in the form of plates, forty inches square and eight inches thick, with two-inch hollow spaces and three-inch thick walls, placed upright and arranged along the lower portion of the tank. One plate can be cleansed at a time by simply reversing the current of water, whilst the head of water necessary in using this filter is three or four feet. Reduction in first cost and in annual working expenses, together with increased efficiency, is claimed for this method of water filtration, which has been chiefly tried on the Continent (Arad in Hungary, Worms, Vienna, Landsberg, Wusterhausen, etc.), but an installation of which can now be seen in England—at Westcott, near Dorking—an installation erected by Messrs. Hughes and Lancaster, of 47, Victoria Street, London.

Dr. Schumberg suggests the sterilization of water by means of a solution of bromine and bromide of potassium (allowed to act for five minutes), with the addition of a solution of ammonia (9 per cent.) afterwards to remove the bromine—20 parts each of bromine and bromide of potassium in 100 of water being required.

The Pasteur filtration, as carried out on a large practical scale by the Municipality of Darjeeling, is proving satisfactory, and will be of value in cases where, from any cause, the water supply of a district is suspected.

As to the Metropolitan water supply, the Commission's Report of 1893 practically stands good, and consequently for the next few decades London will have to depend upon the rivers Thames and Lee as sources of supply, the present sand filtration being in the opinion of Government Experts all-sufficient to warrant Londoners in resting satisfied. *Nous verrons!* Indeed, the only matter at present troubling the Metropolis is as to the advisability or otherwise of its water supply being taken out of the hands of private Companies and transferred to those of a Trust or Public Board, the members of which are to be elected by the ratepayers. For the elucidating of this and other kindred matters, a Royal Commission has been allowed by the Government, appointed, and has commenced already

its sittings, with instructions to consider as follows: (1,) Should the undertakings of the Water Companies be acquired and managed by one or more Authorities; and if so, which? *or* (2,) Should additional powers of control (and if so, what) be exercised by Local and other Authorities? *or* (3,) Whether two or more of the different systems of supply should be connected?

Similar questions are being discussed by other Sanitary Authorities outside the Metropolis, and the Maidstone and other epidemics have undoubtedly been, and will be, the cause of many Authorities putting their houses in order in regard at least to water supplies.

Before leaving the subject of water supplies, it may be mentioned that during the last year the Local Government Board has at length given a decision on the subject of Sanitary Authorities engaging the services of so-called water-divining experts, and auditors are in future to be allowed to surcharge Authorities with the costs incurred therewith. The question came up in connection with Mr. Gataker (a water diviner) and the Ampthill Urban Council, and other water diviners and the Porthcawl District Council, etc.

House Refuse, etc.—Prominence has been given to the utilization of household dust and refuse for the generation of electricity by the installation at Shoreditch, London, of large destructor furnaces, which burn the house refuse, etc., of that particular Metropolitan district, and from the heat obtained therefrom produce steam for the purposes of driving dynamos and generating electricity for lighting the public streets, etc. The idea is an old one, but its practical application for the electric lighting of a Metropolitan parish belongs to the past year, and the eyes of the world are watching the experiment which, so far, is proving highly successful.

THE EDITOR'S TABLE.

A Review of New Inventions, and Pharmaceutical and Dietetic Articles.

MEDICAL AND SURGICAL APPLIANCES.

Antiseptic Ligatures.—It is difficult in general practice to always have antiseptic ligatures at hand to meet cases of emergency. The advantage of having a reel (*Fig. 94*), in a glass vessel, small enough to go into the waistcoat pocket; or three reels, with different sizes of gut in a bottle which occupies but a small space in the surgical bag, goes without saying. Some specimens of this character sent us by Messrs. Ferris & Co., of Bristol, meet

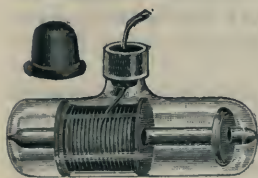


Fig. 94.

with our unqualified approval.

Aural Snare (Heath).—This is a neatly designed snare for aural purposes (*Fig. 95*). The closure of the loop is controlled by a ratchet,

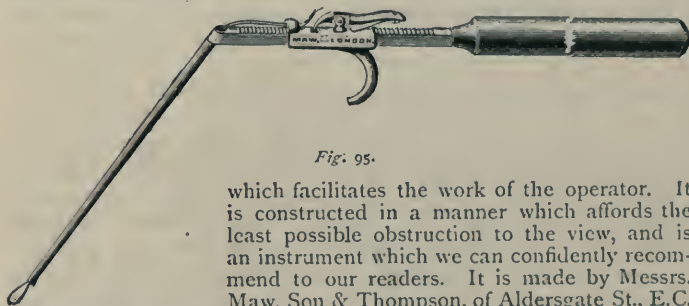


Fig. 95.

which facilitates the work of the operator. It is constructed in a manner which affords the least possible obstruction to the view, and is an instrument which we can confidently recommend to our readers. It is made by Messrs. Maw, Son & Thompson, of Aldersgate St., E.C.

Bed Cradle (Portable).—The illustration shows an improved form of portable bed cradle (*Fig. 96*), designed by Nurse Steer, of the Guy's Institution, who must be given credit for a very clever idea.

These appliances are generally wanted in cases of emergency, and the ordinary form of bed cradle is a most inconvenient article to stow away, and difficult to convey to a patient's house. These objections appear to be entirely overcome in this new invention, which, when out of use, folds up into a very small compass. The cradle is made by Down Bros., St. Thomas's Street, London, S.E.

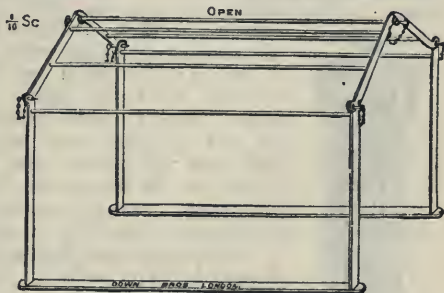


Fig. 96.

Bed-Pan (Improved).—Nurse Brierly has invented a bed-pan (Fig. 97) in which the practical difficulty of keeping them clean is effectively overcome by an opening along the entire length of the handle. The new bed-pan is also a little deeper in the centre than those in common use, but being gradually sloped from the sides is equally convenient for placing under the patient. It is manufactured by

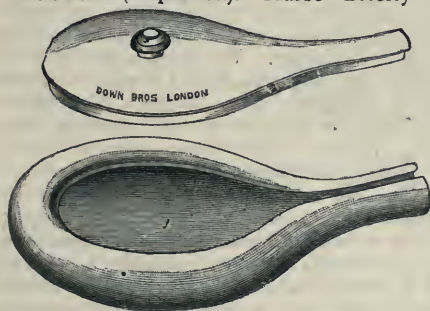


Fig. 97.

Down Brothers, St. Thomas's Street, London, S.E.

Catheter.—A decided novelty in soft catheters has been produced by Messrs. Mayer & Meltzer. It is to utilize both ends of the catheter for penetrating the urethra, and to make them of different sizes and shapes, so that each catheter is practically two instruments (Fig. 98).

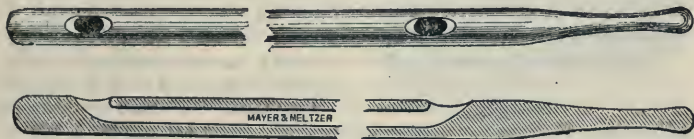


Fig. 98.

This reduces by one-half the number of instruments it is necessary to carry, and we can find no disadvantages attached to this combination, and believe they will find great favour with the profession.

Catheter Sterilizer.—Much attention has been given of recent years to the subject of catheter sterilization, and the appliance sent us by Messrs. Sumner and Co., of Liverpool (*Fig. 99*), appears to solve a problem, the difficulty of which must have occurred to most of us. It consists of a tall glass cylinder having at the upper part a plate perforated with holes to fit all the various sizes of catheters and bougies, and from which they hang suspended. A pellet is placed at the bottom of the cylinder, which gives off fumes and maintains the air aseptic. The cylinder is closed by a glass stopper. Of course it is necessary that the catheters should be perfectly cleansed in the ordinary way before being put into the cylinder, but it is an obvious advantage when they are put away that they shall be maintained in an aseptic condition, and it is also of great value to have the receptacle such as will permit of inspection without opening the vessel. This is accomplished by using a glass cylinder. We believe that this will be appreciated by surgeons, and it would be a great advantage if this plan were adopted in hospitals, as the fact that an instrument was missing would be at once evident. The whole apparatus, with antiseptic pellets, only costs 15s.



Fig. 99.

Caustic Pencil and Points.—By embedding a stick of nitrate of silver in cedar-wood, precisely in the same manner as a lead pencil, it is prevented from breaking or becoming decomposed when not in use, and when the point has been used, it is only necessary to sharpen it with the pen-knife, as if it were a lead pencil, to renew it. Messrs. Sumner & Co., of Liverpool, send us this novelty, which supplies a real want, and they have also extended its usefulness by fixing to a handle which renders it long enough for application to the throat or cervix uteri. We appreciate the utility of this inexpensive appliance. The same firm also put up sulphate of copper and alum in tapering points on wooden handles, which much facilitate the use of either of these agents when required for touching an indolent ulcer, or for other purposes. It adds very much to the convenience of the practitioner to have these agents in a form which enables them to be placed with instruments and other appliances.

Combination Garments.—We described in our last issue an improvement made in combination garments by Mr. Fredk. Penberthy, of 390, Oxford Street, London, W. The idea is to make the garment of double thickness over the abdominal and pelvic organs, so that protection is afforded against chill without the necessity of wearing a special belt or wrap. The idea is excellent, and we refer to it again because the inventor has effected an improvement by which the protection afforded to these organs is rendered more complete than formerly.

Cycles and Cycling.—The medical profession as a body have taken a great interest in cycling and are constantly consulted not only as regards its suitability in special cases, but also as to the choice of machines. Of late years the same model has been so closely followed by all makers that there is little to be said on this point. The frame of the modern machine is excellent, but it is extraordinary that makers should send out machines with brakes that are wholly unreliable and which have been the cause of so many serious accidents. It is not merely these accidents, but the feeling of insecurity which causes nervous tension, and robs cycling of the health-giving results which would otherwise accrue from it. Cyclists appear to be unconscious of the existence of this tension, but it is only necessary to watch the faces of a stream of cyclists as they descend a hill, to prove it beyond a doubt. This is not as it used to be. The older fashioned cycles were fitted with proper brakes. The band-brake was efficient and reliable; there is nothing in the construction of the modern Safety to prevent its use. It is ridiculous that in order to save a few ounces in the weight of a machine the lives of people should be endangered. As a matter of fact there is a loss rather than a gain of power, because the rider of a machine with a "plunger brake" on the front wheel must exert his strength to back-pedal down hills, whereas the rider with a band brake on the axle can take a rest and feel perfectly secure on the steepest hill. If our medical friends would insist on the use of this brake it would prevent very serious accidents. We have made enquiries amongst the leading manufacturers as to whether they will fit machines with band-brakes, and have received favourable replies from the Sparkbrook Co., of Holborn Viaduct, and the Humber Co. The latter Company, however, decline to allow the purchaser to select his own tyre, owing to arrangements with the "Tyre combination." We think that the progress of cycling will best be helped by an instance, before giving an order, that any tyre selected will be fitted.

Without attempting to have reached a final conclusion upon the tyre question, we can say that we have been very much pleased with the "Fleuss" tubeless tyre (*Fig. 100*), more especially because it is made of good rubber, and requires inflation less frequently than any other we have used. It will be observed from the illustration that it has no inner tube, and that when removed from the machine it is merely a flat piece

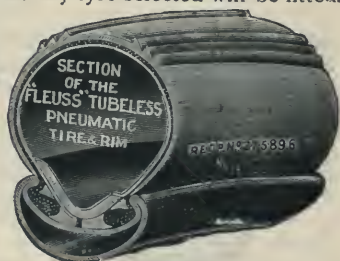


Fig. 100.

of india-rubber, which becomes a tube when it is placed in position. This fact enables a puncture to be repaired from the inside of the air-chamber, an impossibility with any tyre having an inner tube.

As a vehicle for professional use the tricycle has many advantages over the bicycle. It is particularly useful in country districts when

the roads are too muddy for walking, on the days when the bicyclist, perforce, stays at home. It will carry a case or surgical bag for any emergency. The Badminton Co. issue a tricycle which for speed and excellence of manufacture is far ahead of most of the machines sold; it is also cheaper. Its single defect in our estimation is that the brake is on the front wheel, although it is vastly superior to the ordinary plunger brake. The Sparkbrook tricycle with the band brake on the centre axle is the one we like best for hilly districts.

Diapers.—Under the name of the Hygroscopic Diaper, Messrs. C. H. Woolstenholme & Co., of Teb Street, Manchester, have introduced a material which, while strong and durable, is as soft as a piece of lint, and quite as absorbent. It is intended as a diaper for infants' or ladies' use, and is sent out in a convenient size for this purpose; but we think the material will find other uses on account of the qualities we have mentioned. Thus it is better adapted for wet compresses than any material we have handled. It is cheap, the full-sized diaper, ready hemmed, costing 6/6 per dozen.

Emergency Needles.—This is the name which Messrs. Ferris & Co., of Bristol, give to a little arrangement which every practitioner will appreciate. It consists of a glass tube, hermetically sealed and containing antiseptic fluid, and also a needle ready threaded with catgut or silk (*Fig. 101*). The needle being curved or straight, one or more of these



Fig. 101.

tubes can be carried in the pocket surgical case, so that the practitioner is always ready to meet an emergency under the most favourable conditions. With this and a ready prepared dressing, such as is now sold, the general practitioner is able to carry out minor surgical

operations under the strictest antiseptic precautions, and we owe something to those who devise and send out these practical but inexpensive helps to professional work.



Fig. 102.

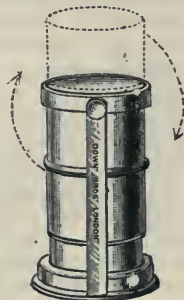
pette (*Fig. 102*) which has been recently introduced by Messrs. Ferris and Co., of Bristol.

Eye-Drop Bottle.—We illustrate an inexpensive eye-drop bottle and pi-

Eye Instrument Sterilizer (Portable).—The illustrations (*Figs. 103, 104*), represent a new portable form of sterilizer for eye instruments designed at the suggestion of Mr. Simeon Snell, of Sheffield. With the ordinary forms of sterilizer the instruments are frequently immersed too long in the boiling water, which results in injury to the edges of the cutting instruments. In the present case it is merely intended that the blades of the instruments should be dipped in, but it is large enough to allow of the immersion of speculum and other instruments, if desired. The whole apparatus is so portable that it can easily be carried to the patient's house in an ordinary surgeon's bag. The apparatus is registered, and made by Messrs. Down Bros.



OPEN

Fig. 103.

CLOSED

Fig. 104.

Flat-Foot (Support for).—The instep-arch sock, designed by Mr. Holland, of 40, South Audley Street, W., has greatly facilitated the treatment of this affection. It is now only necessary to send a tracing of the foot, for the arch sock is supplied in a form in which it can be worn in any boot. Mr. Holland has recently improved the appliance, rendering it stronger, and by a little re-arrangement of the spring, greater support is given to the astragalus at the point where the calcaneo-scapoid ligament fails.

Harvard Chair.—This chair was introduced some years ago with the object of providing in a single chair all the positions required both for surgical and gynæcological practice as well as for examinations of ear, throat and eye. The Harvard Co., of Canton, Ohio, U.S.A., have recently made some improvements by which a still larger number of positions are rendered possible (*Fig. 105*). We have had one of these chairs in use for many years, and so far we have not found any difficulty in placing the patient in any possible position required, nor have we had occasion to make use of all the arrangements provided. We should feel at a loss without it, because when the patient is once seated we can instantly arrange it at an angle, or

*Fig. 105.*

in the horizontal or semi-reclining position, turn it in one way or the other to catch the light without any movement being required of the patient at all. This is not only convenient, but it saves a great deal

of time. After using the chair for many years for all kinds of work we find it is in as good a condition as the day we purchased it, and we have never had any breakages or repairs. We can, therefore, recommend it to our readers with absolute confidence, regarding it as a marvel of mechanical skill. The British agents are The Harvard Co., 180, Gray's Inn, W.C.

Inhaler (New).—Messrs. Allen & Hanburys have introduced a new inhaler for the administration of anæsthetics, which is claimed to possess many improvements over those at present in use. We hope to have an opportunity of submitting this to a careful trial during the year, and reporting fully upon it in our next issue.

Lattice Legging.—This is made of soft red india-rubber in the form of legging, the word "Lattice" describing the large triangular spaces left in the rubber in addition to small holes to permit of respiration of the skin. It is intended to take the place of the ordinary elastic stocking in cases of varicose veins. The legging exerts a more regular and even pressure than a "Martin's" bandage, and might be used in cases where an ordinary rubber bandage was not borne. If applied over a stocking it would be useful in most cases of varicose veins, but comparatively few will bear the rubber next the skin. It is a decided novelty, and deserves a careful trial at the hands of the medical profession. The Lattice Elastic Stocking Co., 70, Fenchurch Street, E.C., are the manufacturers.

Lion Forceps for Use in Screwing, Wiring, and other Operations on Bone.

E. A. Peters, M.B., B.C.

Wiring, screwing, and other devices have been successfully employed by Mr. Arbuthnot Lane and others for the purpose of securing correct apposition of fractured bones and their retention in this position. The results so obtained encourage a further use of these methods, and particularly their application to fractures in the neighbourhood of

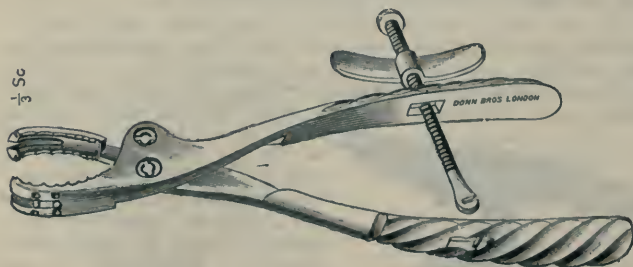


Fig. 105.—The forceps used with the two narrow-jawed blades.

joints. The precision thus attained is more fully recognized when accurate drilling previous to the deposition of wires and screws is made easy. To meet the requirements in such operations I have devised the above-mentioned instrument (*Fig. 106*). Essentially

the forceps is a modification of Farabœuf's lion forceps, and can be used for all the purposes of a lion forceps. It is further fitted with a detachable approximating screw and an additional limb suitable for the passage of screws or, in certain cases, of wire. A drill grooved along its length with a trocar point is adapted for use with the instrument. Both jaws of the forceps are sawn longitudinally so as to allow wire to be passed free of the forceps. The upper jaw is drilled with holes in two series, the one series being adapted for larger, and the other for smaller bones. By this arrangement it is possible to drill a hole in any position up to 40° from the vertical in either direction. This varying angle of impact is obtained by conical holes on either side of the central saw slit. The saw slit is also conically enlarged at suitable points to accommodate the drill without allowing it to slip. The third limb (*Fig. 107*) has a



Fig. 107.—The additional or third limb with wide jaws.

large forked extremity which will allow of the manipulation of any drill and screws. The forceps can be used either for drilling the two bones in position and subsequent wiring without relaxing hold, or for boring a single piece of the fractured bone. It is so arranged that a wire can be passed from the central slit into the holes in the bone which have been drilled through the side holes of the forceps. If therefore, one of these lateral holes of the forceps is used to direct the drill, the wire can be adjusted without removing the forceps. The main points connected with the forceps are: (1,) A firm grip can be obtained on one or more fractured fragments, and the forceps retained in position by the approximating screw; (2,) The drill can be passed precisely, rapidly, and without fear of slipping; (3,) The wire or screw can be passed and adjusted without removing the forceps. The instrument can be used as ordinary bone forceps. Made by Messrs. Down Bros., 21, St. Thomas's Street, London, S.E., to whom my thanks are due for the care they have expended on its manufacture.

Marlborough Chair (The).—This is an ideal chair for invalids (*Fig. 108*).

It is at once a couch for reclining, or an upright arm-chair for reading or for meals. It passes from one stage to the other by such gradual transitions, that it is impossible not to find the desirable angle. But the feature of the chair is, that



Fig. 108.

the invalid can arrange and rearrange the position without the aid of an attendant or without rising from the chair. Here it excels any other chair with which we are acquainted. It has an adjustable head-rest, which can be adapted to any required position, and the chair will remain rigid, or rock at pleasure. It is a very clever mechanical contrivance, and is produced at a very moderate cost. We have spoken of it as an invalid chair, but we may suggest that the weary practitioner might find moments when he could test its advantages on his own person. Messrs. R. S. Foot and Son, of 171, New Bond Street, W., are the manufacturers.

"Mavette" (The).—This is a new kind of garment for infants and children, or perhaps we should say a piece of wool-wove material, so shaped that when wound round the body it forms a covering for the chest, back and abdomen, and in the case of infants has a tail-piece which supports the napkins. The great ease with which garments of this kind can be put on and taken off is their strong recommendation. It saves trouble to the child and also to the nurse. It is introduced by the Mavette Co., 70, Fenchurch Street, E.C.

Mene Ladies' Towel.—This is the production of Messrs. Robinson & Sons, of Chesterfield. It is made up of a layer of gauze, then absorbent cotton wool; inside this is a layer of Robinson's cellulose wadding, and outside a water-proof grey wool. The cellulose wadding is made of pine wool, and has a marvellous power of absorbing and diffusing fluid, and on this account the towel will last longer than the absorbent wool towel in ordinary use.

Microphonoscope.—This is intended as an improvement on the ordinary bin-aural stethoscope, the improvement consisting in the addition of a membrane to the chest-piece. This membrane is protected by a vulcanite cap which fits over the chest-piece and which is removed when in use. We find that the arrangement does accentuate the sound, and we think that it will be appreciated both on this account and the moderate price at which it is sold. It is fitted with the ordinary spring ear-pieces to which we were accustomed before we used the phonendoscope, but since using the simple flexible tubes attached to this instrument we find the springs very unpleasant. We would recommend our readers to specify flexible tubes when ordering. Both Messrs. Maw, Son and Thompson and Messrs. Sumner & Co. supply this instrument.

Monopol Battery.—We believe that this is the smallest faradic battery that has yet been manufactured (*Fig. 109*). Its extreme measurements are $4\frac{1}{4}$ by 3 by $2\frac{1}{8}$ inches, and this not only includes the battery, but space for four electrodes; so that the above size represents all that is necessary for making an application of current under very varied conditions. The question will naturally occur, Can such a small battery be of effective use in medical practice? We have carefully tested it, and we find that it will cause contraction of muscle quite as well as a battery ten times its size and weight. If we have a case where we do not desire to cause contraction of muscle, but only a

gentle stimulation of the part, we shall require larger electrodes than are supplied, but this can be done extemporaneously by wetting a folded pocket-handkerchief, laying it over the part and applying the electrode to it. By increasing the surface over which the current is applied, we can obtain sedative effects which are usually associated with the strong galvanic current, and in this way the faradic current may be usefully employed to soothe an irritable nerve or relax a spasmodic muscle. The battery is a small dry cell, which can easily be replaced when exhausted by the practitioner. We consider it good practice with all such batteries to change the cell frequently when the battery is in constant use, and then the first cell, after a rest, will prove useful again. We have satisfied ourselves that this is a well made and practical instrument, and we can commend it to our readers as the most portable and one of the least expensive faradic batteries which have been made. Messrs. Sumner & Co., of Liverpool, afforded us the opportunity of making every possible test of this battery, and we can speak confidently about it.

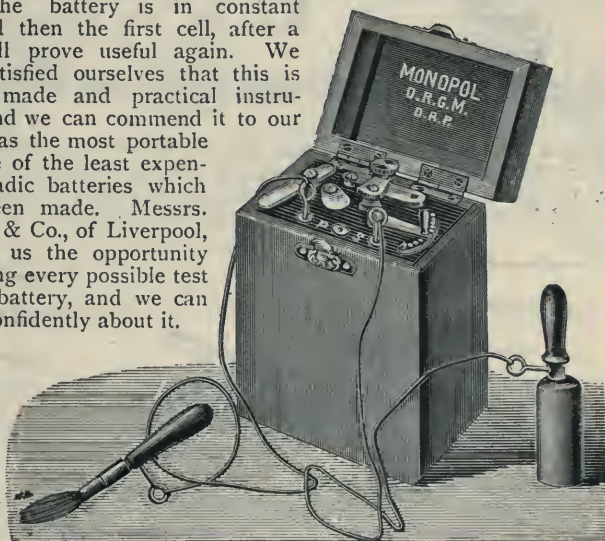


Fig. 109

Mouth Opener and Gag (Improved).—This is the design of Dr. F. W. Cock, of Guy's Hospital. By the illustration (*Fig. 110*) it will be seen that it has a rack catch action, which fixes automatically when opening the gag, while upon touching the trigger the stop rack action is thrown out of gear and the gag closed with the greatest facility, irrespective of the amount of pressure which is being exercised upon the tooth plates. In lieu of the metal vapour tubes, as suggested by Dr. F. Hewitt, a gutter is cut in each of the arms of the gag, over which pieces of rubber drainage-tube may be slipped to convert them into tubes; the advantages of this are that the vapour ways do not increase the bulk, and are readily cleaned or cleared, and, further, being made of solid steel, they are not liable to be damaged from an accidental fall, a somewhat frequent occurrence with the metal tubes originally

designed for the purpose. He has adopted in a modified form the suggestion of Mr. W. R. Ackland—namely, that of setting the tooth

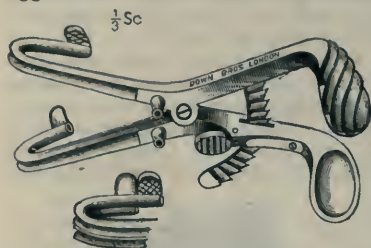


Fig. 110.—The upper figure shows the gag open. The lower shows the blades closed, and the position of the tooth plates one behind the other.

plates one behind the other to act as a wedge if required. The gag can be made with broad tooth plates for edentulous jaws, or those in whom the teeth or gums are tender, thus doing away with bruising, and at the same time giving a wide basis of support. The instrument being entirely of metal is easily sterilized. Messrs. Down Bros., London, are the manufacturers.

Needle Holder for Cleft-Palate.—Messrs. Down have introduced a new needle holder for operations on cleft-palate, at the suggestion of Mr. Arbuthnot Lane (*Fig. 111*). It has a greater length of holder than is found in the ordinary instruments, and is made with a fine stem,



Fig. 111.

which does not obstruct the view of the operator. The needle is grasped firmly, and can be instantly released by removing the pressure from the spring. It is a great improvement on any instrument at present in use for this purpose.

Patella Truss.—Messrs. Salmon, Ody and Co., 292, Strand, London, have at the suggestion of Mr. A. Cooper Key made a truss for the patella which, while maintaining firm pressure, allows for a limited amount of movement of the knee joint (*Fig. 112*). It does not press upon the structure in the popliteal space, and has given great satisfaction in the cases where its use was indicated. This firm now make the plates of their various trusses of aluminium to save weight, and are also covering the springs with celluloid to prevent rust



Fig. 112.

Pipes.—As there are some of our readers who find enjoyment from the fragrant weed, we may mention that a new kind of material has been produced for the bowls of pipes which has the property of absorbing moisture to a remarkable extent. As a result the pipe always remains cool and dry. There can be no doubt that a pipe which will absorb the nicotine, instead of allowing it to collect in the stem, is more healthful than an ordinary briar, and the finish of these pipes is such that they have more the appearance of a meerschaum than a clay. Messrs. White & Co., of Glasgow, are the manufacturers.

Probang.—Messrs. Mayer & Meltzer have introduced a new probang, which differs from the instruments at present in use in the fact that it

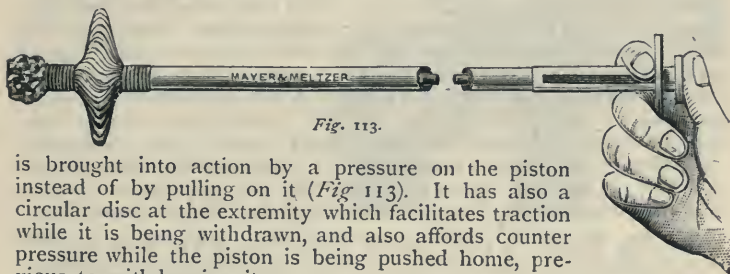


Fig. 113.

is brought into action by a pressure on the piston instead of by pulling on it (*Fig. 113*). It has also a circular disc at the extremity which facilitates traction while it is being withdrawn, and also affords counter pressure while the piston is being pushed home, previous to withdrawing it.

Rectangular Splint.—Mr. Edward Cotterell, F.R.C.S., has designed

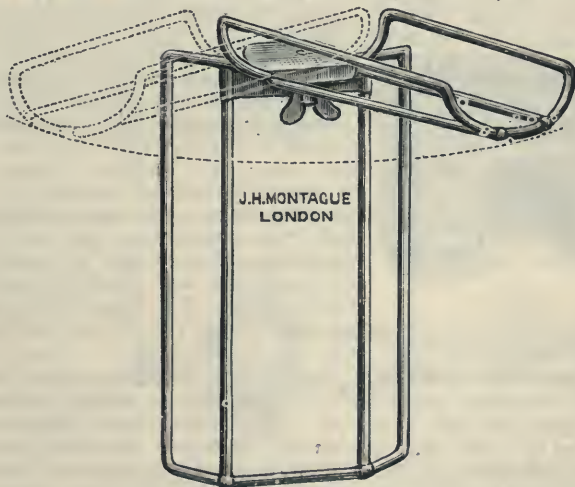


Fig. 114.

a splint (*Fig. 114*) for use after breast operations, the design of which

is to keep the arm at a right angle instead of being tightly across the breast. He finds this position more comfortable to the patient, and attended by less after-stiffness. The splint is made by Mr. J. H. Montague, of 101, New Bond Street, London, W.

Robinson's Dressing.—This is made of alternate layers of cotton wool and cellulose wadding, a layer of gauze being placed on either side. It is cheaper in use than cotton wool, and has a larger power of absorption, owing to the diffusive power of the cellulose wadding. Robinson & Sons, Chesterfield, are the manufacturers.

Rogers's Spray.—The various sprays are too apt to go quickly out of order. One of the reasons for this is that the bottles used are large enough to contain a sufficient fluid for prolonged use. The spray tube is therefore left in the solution, and the salts which it contains deposit on the fine tube and choke it. In Rogers's spray the vessel for holding the solution takes the form of a tube, on a firm pedestal, and is only intended to hold just sufficient fluid for a single application. It is therefore easier to handle than the ordinary spray bottles, and obviates the difficulty that we have mentioned. It throws a finely divided spray of larger volume than the sprays in common use, and its price is small. It is the design of Mr. Frank A. Rogers, of 327, Oxford Street, W.

Roll-Top Desks.—A good roll-top desk is one the greatest luxuries to a professional man, and to a medical practitioner it is almost a necessity, because it is difficult otherwise to secure privacy for the contents of the writing table. Such an article is now made, so that by simply pulling down the roll-top the whole desk is locked automatically, including the drawers at the side (*Fig. 115*). The enormous amount of

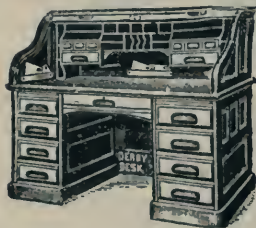


Fig. 115.

time saved in a single year by this arrangement is almost incalculable. All these labour-saving devices come from America. It looks as if our American friends were either such busy men that they have not a moment to spare, or is it that they are not inclined to give themselves any more work than they can help? Anyhow, we are glad enough to make use of their devices for saving time and worry, and are infinitely obliged to the inventors. Mr. Thos. Turner, of 44, Holborn Viaduct, is the representative in this country of the highest class of these desks.

Scissors.—The "Hausa" scissors have an arrangement which greatly strengthens the pinion which connects the blades, and ensures a very powerful and steady cut. The blades can be separated for cleansing by removing a screw, which while less convenient than the scissors with blades which can simply be lifted apart, enable the scissors to be made in a much stronger and more durable form. Messrs. R. Sumner & Co., of Liverpool, consider them a great improvement on the ordinary aseptic form, and we quite agree with their view.

Sphygmograph (Teske's Pocket).—The introduction of a sphygmograph which can be easily carried in the pocket is likely to make this method of clinical investigation more popular with the profession. The instrument (*Fig. 116*) measures two and three-quarter inches in length, five-eighths of an inch in depth, and one inch in width, so that the term "pocket" is well within the mark. It is always of importance in the case of these miniature instruments to determine whether they are practical. We have, therefore, instituted a large number of experiments with this instrument, and the result has been very satisfactory. The tracings obtained have been in every way equal to those which have resulted from the larger and more cumbersome instruments, and so far as we can judge there are no parts which, if they went out of order, would give any trouble to repair. It is produced by Messrs. Maw, Son and Thompson, and costs 55/-.

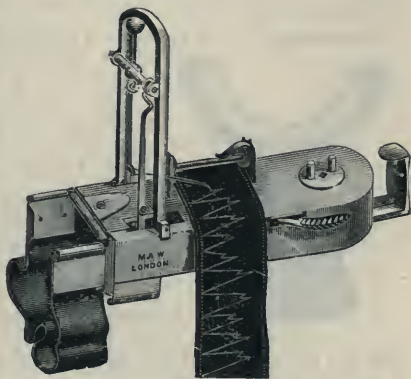


Fig. 116.



Fig. 117.

Sterilizing Tray for Needles.—We illustrate a shallow tray (*Fig. 117*), which Messrs. Ferris & Co. have introduced, for rendering the

sterilization of needles more convenient.

Stethoscope.—Messrs. Maw, Son & Thompson send us a new competitor amongst the instruments for auscultation. In this instrument (*Fig. 118*) the chest-piece terminates in a solid point which conducts the sound through a spring arrangement to which it is attached. It is adapted to be used either with the ordinary spring ear-piece, or with the flexible tubes, such as are used with the phonendoscope. We prefer the latter. The sounds that come through this instrument are particularly distinct, and are free from any vibratory disturbance. We believe that this instrument will be much liked, and especially for the

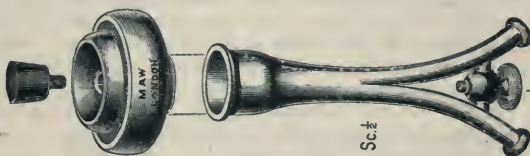


Fig. 118.

examination of heart cases. We would advise the makers to send it out with flexible ear-tubes and in a soft leather purse instead of the square box in which the chest-piece alone is now sent out. Most of us keep our auscultatory instruments in our pockets.

Stethoscope.—We illustrate a new design for chest-piece of stethoscope, designed by Dr. Charsley, of Slough (*Fig. 119*). It is about one-third the length of those usually sold, and the shape adapts itself well to the fingers, when in use. It is made by Mr. J. H. Montague, 101, New Bond Street, London, W.



Fig. 119.

Surgical Lamp.—Mr. Montague has also produced a new form of surgical lamp for examination of eye, nose, and throat. Electricity is the lighting medium, and it requires for use a small transformer and an alternating current. It was made at the suggestion of Mr. Hickman. The design appears practical, but we have not had an opportunity of testing it.

Tonsil Guillotine (Heath).—Mr. Heath, F.R.C.S., claims for this instrument (*Fig. 120*) some improvements upon the "old-fashioned" guillotine. As Sir Morell Mackenzie's instrument is the one obviously referred to, we have made careful comparison between the two. Heath's



Fig. 120.

guillotine is a larger and heavier instrument than Mackenzie's, and this refers not only to the handle but to the part which is applied to the tonsil. Naturally we look for some compensating advantage. With a larger sheath we ought at least to be able to point out that it will grip a larger tonsil, but the reverse is the case; the aperture for the admission of the tonsil is much smaller in Heath's than it is in Mackenzie's. Heath claims that the fact that this aperture is circular is an advantage, but there are mechanical reasons why it is easier to snare a tonsil or any other projecting body with an oval loop than with a circular one. Heath's guillotine has the handle inserted at a right angle, which he claims as an advantage, but it is not very obvious. The angle at which the handle is placed in Mackenzie's guillotine enables the hand grasping the instrument to keep clear of

the patient's face. Heath accomplishes the same object by making his instrument much longer than Mackenzie's, which is not an advantage. Heath's instrument has one advantage over Mackenzie's in the fact that the blade is more easily separated for cleansing purposes. If the author in designing this instrument had appreciated and adopted the mechanical excellences of Mackenzie's instrument, this fact would have given the "improved" guillotine an advantage. Mackenzie's instrument is fitted with a changeable handle which enables it to be used with equal facility for the right or left side. Heath appears to think this unnecessary, as he has made no arrangement of this character. Messrs. Maw, Son and Thompson are the manufacturers, and they have carried out the author's design very perfectly.

Trephine (New).—This instrument is made by Ferris & Co., of Bristol, at the suggestion of Mr. Walter Falla, surgeon to the Jersey General Hospital (*Fig. 121*). In trephining for compound depressed fracture of the skull it occurred to the inventor that it would be an advantage to have an instrument without the central pivot pin which could completely encircle the depressed bone. With the old instrument, the pin having to be placed upon the edge of the undepressed part of the skull, obviously necessitates having to remove an unnecessarily large portion of sound bone, and often the trephine cannot completely cover the fracture. The new trephine consists of a circular guard with three projecting points surrounding the saw edge, so as to get a purchase on the sound bone until a sufficiently deep groove has been cut. The guard can be held with the left hand while the right hand rotates the saw, and the guard can be made adjustable so as to regulate the depth of the saw-cut by a stop-collar on the stem. Trephines of various sizes can be adjusted to the same handle, and only one guard is required. This instrument not only meets the particular object in view, but has also other advantages over the old-pattern trephine. The blade being open, it is light and the operator can see what he is doing. The whole instrument can be taken apart for cleansing and sterilizing without any trouble. After careful examination we are of opinion that the instrument is constructed in a manner which is highly creditable to the manufacturers, and that it possesses great advantages over the trephining instruments at present in use.

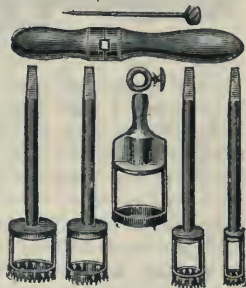


Fig. 121.

Water-Fuel Stove.—A remarkable discovery has been recently made by Dr. Percy Wilde, of Bath. It is that water can by simple mechanical means be rendered combustible in the flame of an ordinary atmospheric gas burner, and that the gases arising from this decomposition supply precisely what is needed to complete the combustion of the gas flame. As a result, a yellow flame takes the place of the colourless "Bunsen" flame, the heat given out is greatly increased,

and this is of a pleasant moist character instead of the dry heat of the ordinary gas fire, and above all, the smell of the gas fire is altogether got rid of, the products which caused it being completely consumed. The mechanical arrangement by which this is brought about is very

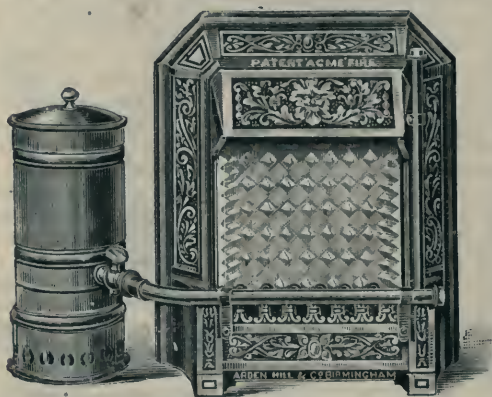


Fig. 122.

simple (Fig. 122), and depends upon the fact that the water in passing from a receptacle near the stove is gradually subdivided, so that when it reaches the flame every drop presents a large surface to the flame, and in this state it comes in contact with an incandescent asbestos wick, which completes the decomposition. We have used one of these stoves

in our study for four months, and in order to test it we have not connected it with the chimney by any flue or pipe. The result has been that a very small stove has heated a large room, and with a complete absence of any kind of smell, even when the room has been shut up for some hours, and entered direct from the fresh air. We are convinced that this stove may be used in the rooms of invalids who, at present, are unable to tolerate a gas fire. Messrs. Arden Hill & Co., of Birmingham, are the manufacturers.

Vaginal Douche Tube.—This is a very practical method of overcoming the difficulty of administering douches without the water escaping into the bed (Fig. 123). The upper tube, made of glass, fits into the sheath figured below. The india-rubber stopper is cut away at its lower part, so as to allow the escape of water along the channel formed by the sheath, from which it can be caught in any convenient receptacle. Messrs. Ferris & Co. are the manufacturers.

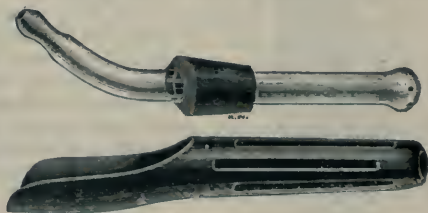


Fig. 123.

Weighing Machine.—There is a very distinct advantage in having a weighing machine in the consulting room, but up to the present time this has not only been a very expensive appliance, but also rather

cumbersome. We have received and carefully tested a machine on the steel-yard principle, which will weigh up to twenty-four stone, which occupies but a very small space, and which costs a guinea (*Fig. 124*).

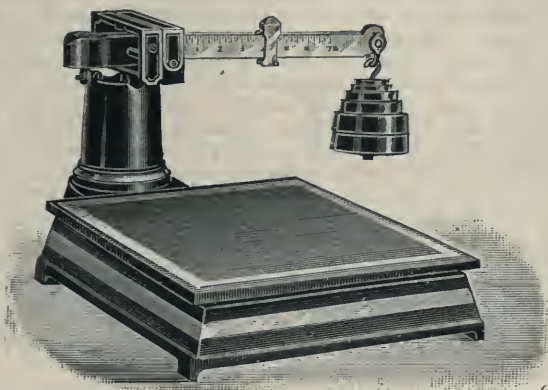


Fig. 124.

We have not only found it very accurate, but the principle upon which it is built renders it very unlikely to go out of repair with use. When not in use it may be pushed away under a table. We think that our readers would find it a good investment to purchase one of these. It is decidedly the cheapest and most practical weighing machine that has been brought before the profession. It can be obtained from Messrs. Ferris & Co., of Bristol, and also from Messrs. Sumner & Co., of Liverpool.

Wound Retractors (Automatic).—The annexed illustration (*Fig. 125*) represents a pair of wound retractors threaded on a rubber cord, and designed to obtain traction on the edges of a wound in operations on the neck, limbs, etc. Each retractor consists of a flat piece of steel, one end of which is fashioned into a pair of hooks, blunt or sharp;

FULL SIZE



Fig. 125.

the other end is bent upwards, is perforated at the angle by a hole through which the rubber cord passes, and the latter is then clipped into a vertical slot after the manner of fixing the ends of a field tourniquet. The instrument may be held or altered in position by

grasping the grooved sides of the handle portion. To use the retractors (say for excision of a varicose vein of the leg), thread one on each end of a long length of rubber cord or thick tubing, and lay its centre beneath the limb; after the skin incision, hook a retractor into the wound edges on either side, making the tension sufficient by drawing the cord through the base of either hook and fastening off. Equal or unequal gaping of the wound may be secured by altering the tension on both sides, or on one only. The retractors are made of varying sizes and lengths, but for retracting the abdominal parietes the proximal end is fashioned like a flat pot-hook, but without prongs. For tracheotomy operations on blood-vessels of the limbs, abdominal sections, and in any situation where bilateral traction can be employed, these retractors will be found useful, especially where the operator is short-handed as regards assistants. Some of the advantages possessed by these hooks are: Less handling of the wound is required, more room is obtained in which to work, and less assistance is necessary; it is therefore more easy to maintain asepsis. These instruments are a modification of Prof. Jordan Lloyd's well-known retractors, made at the suggestion of Mr. Reginald H. Lucy, F.R.C.S., of Plymouth, and are manufactured by Down Bros.

Wrap for Invalids.—The Jaeger Co. have lately introduced a woollen wrap especially designed to meet the requirements of the patient who when sitting up in bed for meals, or at other times, requires some warm covering which can be easily put on or taken off. The model followed is that of the "Nightingale," but by an ingenious arrangement there are no sleeves when the garment is put on, but sleeves can be easily produced by fastening a couple of buttons. The garment combines exceeding lightness with warmth, it is made in natural wool, and unlike many hygienic materials, has a very attractive appearance. We have ordered this for some of our patients, and they have been delighted with it.

PROGRESS OF PHARMACY.

Antikamnia.—We have noticed this valuable analgesic in a former issue. It is now brought out in the form of tablets combined with various drugs which have been found useful in combination with it. These are quinine, quinine and salol, salol and codeine. Mr. J. M. Richards of 46, Holborn Viaduct, E.C., is the agent.



Fig. 126.

Antiseptic Soft Soap in Tubes.—This is a nice arrangement put up by Messrs. Sumner & Co., of Liverpool. It can be carried in the pocket or bag, and instantly gives a good lather when moistened with water (*Fig. 126*).

Aqueous Tinctures.—We have always pleasure in calling attention to any efforts which may be made to reduce the drug-bill, where such efforts do not mean loss of efficacy in

the agents employed. Messrs. Sumner & Co. have been trying to reduce the cost of tinctures by diminishing the quantity of spirit used in their preparation. As a result they send us the following: *Tinct. Aurantii*, *Tinct. Nucis Vom.*, *Tinct. Gentianæ Co.*, *Tinct. Cardam. Co.*, *Tinct. Digitalis*, *Tinct. Hyoscyami*. We have examined these carefully, and find that they are freely miscible with water and are equal in every respect to the tinctures of the Pharmacopœia. There is no advantage in giving the patient spirit under such circumstances; in fact, in dealing with sedative remedies, such as hyoscyamus, there is some question as to whether the spirit is not a distinct disadvantage, and as the cost of these is about one-half of the Pharmacopœia tinctures, we have no doubt that Messrs. Sumner's efforts will be very much appreciated by the profession.

Bile Salts (Test for).—Messrs. Hewlett & Son, 40 to 42, Charlotte Street, E.C., supply a peptone test for bile salts, which is both accurate and convenient. The clear urine should be diluted to about the specific gravity of 1·008, and an equal quantity of the test added. The presence of an excess of biliary acids will be shown by turbidity. The urine should be filtered, if not quite bright, before the test is added and the contact method is the most delicate.

Chinosol.—We have received a number of preparations of chinosol, which have been made with a view to facilitate the use of this valuable agent. Chinosol belongs to the quinoline group, and is a pure chemical compound, having for its formula $C_9H_6N.KSO_4$; it is a most powerful antiseptic, disinfectant and deodorant. Bacteriological reports show that chinosol is in its germicidal action at least forty times stronger than carbolic acid, and considerably more effective than corrosive sublimate, without the dangerous and objectionable properties of either of them. Chinosol presents the following advantages over all known antiseptics. It is absolutely non-poisonous and non-irritant; it is readily soluble in warm and cold water in any proportion; its solutions remain active for an indefinite period; it does not coagulate albumen; it quickly penetrates the skin; it favours granulation; it does not stain or damage linen, nor does it injuriously affect the skin of the hands even in the strongest solutions; it does not attack steel or iron instruments; only strong solutions will produce dark stains, such as fruit juice would, and these are easily removed by rubbing with whitening. Chinosol is a most efficient disinfectant, and acts very promptly as a deodorant. Mr. B. Kuhn, of 36, St. Mary-at-Hill, London, E.C., is the British agent.

Chlorobrom.—The value of this remedy in sea-sickness has been mentioned in previous issues of the "Annual." It is supplied by Messrs. Burgoyne, Burbidges & Co., Coleman Street, E.C.

Cocaine and Eucaine.—The relative advantages of these anæsthetic agents have been widely discussed. The general conclusions appear to be that whilst cocaine acts more quickly eucaine is less toxic, and has the advantage, as far as ophthalmic work is concerned, of not producing mydriasis or corneal disturbance. These facts have suggested

to many ophthalmic workers the employment of a solution containing equal parts of the artificial and of the natural alkaloid. By this means the toxic danger of cocaine is avoided, as well as dilatation of the pupil, without increasing the time necessary for rendering anæsthesia complete. Messrs. Burroughs, Wellcome & Co. are the first to supply a convenient means of preparing the combined solution by issuing "soloid," cocaine and eucaine hydrochloride ($\frac{1}{2}$ gr. each). This "soloid" is readily dissolved immediately before use in a drachm of water, and thus provides a fresh solution at the moment it is required of uniform and reliable strength.

Cremor Zinci-Bismuthi.—This is a combination of boric acid, zinc oxide, and bismuth with vaseline, which is put up by Messrs. Lorimer and Co. Owing to evaporation of the contained water it lowers the temperature of the skin, and has been found a very useful preparation in burns, erysipelas, or where there is any great heat of the skin.

Damiania.—This drug is not used so frequently in this country as it is in America, where its value as a tonic for neurasthenia is well known. Messrs. Hewlett & Co. put up a very elegant preparation of this drug combined with nux vomica and simple aromatics and bitters, which is valuable for dispensing, and yields very satisfactory results in treatment.

Digestenzymes.—There are some cases where it is doubtful whether pepsin or pancreatin will most help the digestive process—cases where both fail. The above name has been given to a tablet and other preparations which contain both these, and in addition, diastase, bismuth, "together with phosphates and albuminoids." It is considered that they are more likely to serve as an all-round digestive remedy than either of these agents used singly. Messrs. Damancy & Co., 69, Berners Street, W., have distributed a large number of samples to members of the medical profession, in order that the claims put forward may receive an extended clinical trial, and we shall watch the result with some interest.

Dried Serums.—This is one of the recent advances of Messrs. Burroughs and Wellcome, and will prove of great practical advantage. This dried serum possesses conspicuous advantages in that it is readily soluble in 3 to 4 parts of water; the volume of the injection in the case of a potent serum is only about 1·3 c.c. for 1500 units. It enables the physician to administer serum of any desired potency, and is perfectly sterilized, and keeps better than the liquid serum in all climates. Anti-diphtheria serum, liquid or dried, is *now* supplied in phials or tubes, each containing 1500 Behring units. Though the weight or volume of the contents of a phial may vary, the number of units represented always remains the same. Reports of numerous cases of septicæmia, puerperal septic intoxication, etc., successfully treated with anti-streptococcus serum (B. W. & Co.) have been reported during the past year. In order to secure adequate and regular supplies of the serum it has been found necessary to considerably increase the number of animals under treatment in the Wellcome

physiological laboratories. Both liquid and dried forms are supplied. The other serums issued by the firm are anti-typhoid, anti-tetanus serums, liquid or dried, and anti-venom serum, liquid only.

Ear Cones (Soluble).—A new method of medication in ear diseases has been introduced by Messrs. Sumner & Co., of Liverpool, which will at once commend itself to the practitioner. The medicament is put up in a flexible gelatinous cone which can be easily introduced into the ear without any of the trouble usually associated with such applications. The formulæ from which these cones are at present made, include cocaine and opium, and cocaine and morphia, for cases where pain is present; and also boric acid and iodoform, which would prove very useful in chronic catarrh. Other formulæ could be easily put up, but these are those most likely to be required in general practice, and we have had no hesitation in adopting them, and are very pleased with the results.

Eka-Iodoform.—This name has been given to a sterilized preparation of iodoform recently introduced by Schering. It appears in the form of a very fine crystalline yellow powder with the characteristic smell. Messrs. A. & M. Zimmerman, of 9, 10, St. Mary-at-Hill, E.C., are the agents.

Emulsio Duotalis.—Under this name Messrs. Burgoyne, Burbidges & Co., 16, Coleman Street, E.C., produce an emulsion of guaiacol carbonate, made with eggs. The difficulty of making these emulsions is to prevent them from separating when they have stood for some time. This difficulty has been got over, and this preparation affords a very convenient method of administering guaiacol in suitable cases.

Emulsio Creasotalis is a similar preparation made by the same firm, and contains creasote carbonate.

Eugol.—Under this name Messrs. Bayard, Sons and Bayard, of 26, Bridle Lane, W., have introduced a clear solution for which they claim antiseptic properties, but as no particulars of its composition are afforded, we are unable to express an opinion concerning it.

Euquinine.—This is described as the ethyl-ether of quinine-carbonic acid. Its chemical formula is $\text{CO} < \begin{matrix} \text{O.C}_2\text{H}_5 \\ \text{O.C}_{20}\text{H}_{23}\text{N}_2\text{O} \end{matrix}$ and it is produced by the action of chloro-carbonic ethyl-ether on quinine. It is claimed that it possesses all the characteristic therapeutic qualities of quinine, while it does away with the latter's unpleasant properties; there is not the objectionable bitter taste, the appetite does not suffer and the patient feels no nausea. Other effects which quinine has upon the patient, such as ringing in the ears and a feeling of numbness in the head, are greatly lessened. These claims are worthy of careful trial at the hands of the profession. Messrs. Widenmann & Co., 33, Lime Street, E.C., are the British agents.

Glandulen.—The bronchial glands are now being used in the treatment of tuberculosis, and the latest preparation of them is "Glandulen." The bronchial glands act as a filter for all foreign bodies

entering the lungs, and they further possess bactericide properties, as has been proved by experiments upon animals. For therapeutic use these organs are removed with all possible antiseptic precautions, from freshly-killed sheep. After cleansing the glands, they are washed in alcohol and all traces of fat carefully removed. They are then dried *in vacuo* at a low temperature, powdered, and sugar of milk added in such proportion, that when compressed into tablets of '25 grammes ($3\frac{1}{2}$ grains), each tablet is equivalent to '25 grammes ($3\frac{1}{2}$ grains) of the fresh glandular substance. It is claimed that those who have used this preparation are enthusiastic in its praise. As the tablets of the gland are easily administered, and can do no harm, there is nothing to prevent an extended trial of the merits of this new organic product. The British agents are Messrs. Thos. Christy & Co., 25, Lime Street, London, E.C.

Lactopeptine.—Mr. J. M. Richards of Holborn Viaduct has recently brought out a tablet containing his well known and universally appreciated lactopeptine. This will facilitate the administration of this digestive ferment, which appears to hold its own against all competitors.

Iodine Pigment.—This is intended to take the place of linimentum iodi, and has the advantage of not discolouring the skin nor irritating it, as most preparations of iodine do. It is also more readily absorbed. It represents a 10 per cent. solution of pure iodine, and should be applied by rubbing it well into the part until the colour disappears. Messrs. R. Sumner & Co., of Liverpool, are the manufacturers.

Mist. Calcii Chlor. cum Ferri—This is a valuable remedy for strumous complaints, which has been prepared in a convenient form by Messrs. Hewlett & Son. It is free from sugar, neutral in reaction, and not astringent. It is also practically tasteless, so that it is taken well by children.

Mist. Hepatica Co.—Under this name Messrs. Hewlett & Son put up a mixture of the extracts of cascara, podophyllin, rhubarb, and jalap, in such a way that a dose of 10 to 60 minims is sufficient, and this dose is not unpleasant to take. It is freely miscible with water, and very convenient for dispensing.

Parahydropin.—Under this name Messrs. Lorimer & Co. have made a combination which appears to us very suitable as a diuretic in cases of heart failure, and a remedy which many practitioners may be ready to fall back upon when digitalis, as it so frequently does, fails. Its composition is, theobromin, sparteinæ sulphas, camphor hydrarg. subchlor., in cachets. Each contains theobromin, gr. ij.; hydrarg. subchlor., gr. ss.

Plaster (Adhesive India-Rubber).—Messrs. A. De St. Dalmas & Co. send us a specimen of their well-known plaster, which is so much more convenient and cleanly in use than the old-fashioned diachylon. We find that its excellent qualities are well maintained

Powders for Dispensing.—In order to save the labour of dispensing, Messrs. Ferris & Co. have arranged to supply powders ready prepared and put into a neat envelope which only requires the directions to be added to complete. For powders in common use this will save an enormous amount of time, and also ensure accuracy of dose. The specimen they sent us contains hydrarg. sub-chlor., 3 grs.; sacch. lac., 6 grs. They also send us cachets ready charged with such drugs as acetanilid, which on account of their insolubility are better dispensed in this way.

Pyridin-Ethyl-Phosphinate.—This is a preparation of pyridin which does not produce the irritating effects which follow the use of the crude drug. Pyridin is undoubtedly a valuable remedy in tubercular affections, especially of the lungs, and now it can be obtained in a form which can be given freely without fear of nauseating the patient, it deserves a more extended trial than it has yet received. Messrs Lorimer & Co. manufacture this new chemical compound.

Rectal Suppositories.—The shape of the ordinary rectal suppository is such that it is easily expelled. Messrs. Burroughs, Wellcome & Co. have introduced a new form under the name of the "Enule." The shape is best seen from the illustration (*Fig. 127*). It will be readily understood that whilst easy to introduce, the suppository cannot be expelled since the contractile force of the *sphincter ani* tends to force it inwards when once the largest circumference is passed. Preservation is secured by enclosing each "enule" in a hermetically sealed sheath of pure tin foil, so arranged that it can be easily stripped off immediately before use. The method of manufacture is such that the "enule" is not touched by hand or contaminated in any way throughout the



Fig. 127.

process. The list of "Enule" rectal suppositories comprises: "Enule" glycerine (children's or adults'); belladonna extract, $\frac{1}{4}$, $\frac{1}{2}$ and 1 gr.; bismuth subgallate, 10 grs.; "hazeline"; "hazeline" compound; meat (pre-digested); milk (pre-digested); morphine hydrochlorate, $\frac{1}{4}$, $\frac{1}{2}$ and 1 gr.; quinine bisulphate, gr. 5. The glycerine enule contains 95 per cent. of anhydrous glycerine, and is free from gelatine or similar bases.

Sal Alteriva.—This is a granular effervescing salt consisting chiefly of sodium sulphate. It is prepared in the form of very small granules, and has a very elegant appearance. The taste is agreeable and refreshing, and we consider it quite the best of the salines at present on the market, and much better liked by patients than the German mineral waters which are now so much in vogue. It is prepared by Messrs. Lorimer & Co.

"Soloid" Products.—Systematic treatment in those cases demand-

ing a regular course of irrigation will be greatly aided by the introduction of the "soloid" products, recently issued by Burroughs, Wellcome & Co. for the instant preparation of gynæcopathic solutions.



The irrigation, douche, etc., is made at the moment and in the quantity required by dissolving 1 "soloid" or more in the requisite quantity of luke-warm water. The following are already issued; "Soloid" alum compound (zinc sulphate and alum, 15 grains each): "soloid" zinc and tannin compound (zinc sulphate, 5 grains; lead acetate, 10 grains; extract of opium, 2 grains; tannin, 1 grain); "soloid" sodium bichlorate compound (sodium bichlorate, 20 grains; tincture of opium, 10 minims).

Suppositories.—Messrs. R. Sumner & Co., of Liverpool, put up a suppository containing ichthyol, 10 grains, which has been found a very efficacious method of applying this agent.

"Tabloid" Medicinal Syrups.—Associated by custom with the syrup form for many years, those valuable medicinal combinations known as chemical food and compound hypophosphites are now issued by Burroughs, Wellcome & Co. as "tabloid" products, forming with "tabloid" Easton syrup the group indicated by the above title. The advantages secured are obvious. Not only is syrup itself entirely dispensed with, leaving the active ingredients unimpeded by diluent, but the medicine is so portable that supplies can be carried in the pocket and taken at regular intervals during the work of the day—a point of great importance in cases demanding systematic tonic treatment.

Thyroid Colloid Substance.—From the evidence to hand it appears probable that the issue by Burroughs, Wellcome & Co. of "tabloid" thyroid colloid substance, $\frac{1}{2}$ grain, prepared according to the published process of Dr. Robert Hutchinson, marks a very important advance in organo-therapy. Articles by Surg.-Major J. Jervis, I.M.S. ("Brit. Med. Journ.," Oct. 2, 1897) and other authorities indicate the special value of this "tabloid" in the treatment of obesity. Cases under treatment with "tabloid" thyroid gland substance have been very numerous, and the results startlingly successful. With this as well as with the other animal substances employed therapeutically, the general principle is confirmed, that it is safest and best to rely upon the whole gland substance until such time as ample clinical proof assures us that the active principles can be isolated without deterioration during or subsequent to extraction. It is upon this principle that the preparation of the "tabloid" animal substances is based.

Tono-Sumbul Cordial.—This is a particularly pleasant stimulant, and is well adapted to those cases of nervous exhaustion where some temporary help is required. It acts better than an alcoholic stimulant in removing feelings of faintness, and patients prone to such symptoms like to have a bottle to keep for use under such conditions. It also relieves cases of nervous insomnia. Messrs. Newbery & Sons are the British agents for this preparation.

Typhoid Fever (Test for).—*Hewlett's Sulphanilic Acid Test for Typhoid Fever* is an improved permanent form of Ehrlich's diazo-

reaction. About a drachm of the sulphanilic acid test is mixed with a few drops of the sodium nitrite solution. Equal parts of this mixture and the suspected urine are shaken together, and strong ammonia added to excess (until it smells strongly of ammonia). If the ammonia is added gently according to the 'contact method' a dark garnet ring appears at the junction, and, on shaking, the foam will be tinted pink, and, upon standing, an olive-green precipitate is deposited. A control test with healthy urine should be performed. Dr. Cruickshank, Van Noorden and others speak highly of the important information conveyed by this test. But it should be borne in mind that the reaction sometimes occurs in other diseases, especially those of a wasting character, and in a few febrile diseases such as acute rheumatism, meningitis and pneumonia, typhus and measles, and is sometimes absent in typhoid after the first or second week.

Urinary Analysis.—Messrs. Hewlett & Son have given great attention to the subject of urinary analysis, and the following reagents are designed to remove the well-known disadvantages of the tests at present in use :—

Hewlett's Alkaline Bismuth Test for Sugar.—The advantages of a colourless reagent that darkens on boiling with urine, containing a significant quantity of sugar, have been widely recognized. One part of the urine should be well boiled with several parts of the test (1 to 7 or 9 parts is a convenient proportion) and if sugar be absent no dark colouration or precipitate will appear, but when present as in diabetes, a dense black colouration or precipitate takes place according to the quantity of sugar present. If albumen is also present, it should be separated first by precipitation and filtration, before using the sugar test. Unlike Fehling's solution, this test for sugar will keep indefinitely.

Hewlett's Trichloroacetic Test for Albumen.—This test is so delicate that it will readily detect 1 part of albumen in 80,000 parts of urine. The 'contact method' is best, *i.e.*, about a drachm of the test is placed in a test-tube and held inclined so that the urine may flow gently down the side of the tube and over the surface of the reagent. On holding the tube vertically straight again the slightest haze or opalescent zone is easily apparent, or in cases where only minute traces of albumen exist, it will be developed within a short time. The resulting precipitate may be confirmed by gently heating when any peptone or alkaloid (very rarely present) would be redissolved while albumen is unaltered.

These tests are supplied from Messrs. Hewlett's laboratory, 40 to 42, Charlotte Street, London, E.C.

DIETETIC PREPARATIONS.

Ambrosia.—This is a name given to a combination of Devonshire cream (25 per cent.) and malt extract (75 per cent.). Its use as a substitute for cod-liver oil in the treatment of consumption is obvious, and we can say from personal trial of it that it is well liked by patients, and that its use is attended with undoubted benefit. It is made by Evans, Gadd & Co., Fore Street, Exeter.

Beef Tea Tabules.—These are small squares, each of which when dissolved is sufficient to make a cup of beef-tea. The beef-tea thus prepared is palatable and nutritious. They are produced by Messrs. Brand & Co., who state they will keep indefinitely, and in any climate. The advantage of being able to keep in the house the means of making a cup of beef-tea at any moment, and at the cost of a couple of pence, is self evident, and we believe that these tabules will be much appreciated. Messrs. Brand & Co.'s name is a guarantee that they may be relied upon to afford the requisite nourishment.

Brandy (Gautier Frères').—There is no more difficult thing than to procure a good brandy for medicinal purposes. Owing to the ravages of the phylloxera in the French vineyards, the supply of good brandy has been very deficient, and has been helped out with distillations made from maize and other substances. We are pleased therefore to know that the well-known firm of Gautier Frères, of Cognac, have a quantity which was made twenty years ago, before the ravages of the phylloxera commenced. We have carefully examined a sample of this, and we find that it has a pleasant flavour and fragrance, and that mellowness which only a very old spirit can acquire. The alcoholic strength is naturally not so great as that of a new spirit, but is equal to about 76 per cent. proof spirit. The colour is dark, and the acidity is practically nil. It is too good a brandy to be used for ordinary purposes; it should be retained for invalids, as the supply of such a spirit is very limited. Messrs. Travers & Sons, Ltd., 119, Cannon Street, E.C., will be pleased to send name of nearest dealer, on application.

Cabot Bread.—This is one of the results of the great attention which has been given recently to the manufacture of bread. Unlike some new breads, the Cabot meal is not a compound, but a purely natural product. The ideal which we have before us is to obtain a flour which shall have the highest nutritive properties combined with ease of digestion. The manufacturers of Cabot bread have accomplished this in a very satisfactory manner by the extraction of the indigestible fibrous material, the elimination of which is a distinct gain to invalids and others having weak digestive powers, whilst practically retaining all the nutritious matter. The bread is pleasant to the taste, and will be appreciated on this account no less than for its nutritive properties: it keeps pleasantly moist without clamminess, and is a home product, being made entirely from wheats grown in the British Empire. It may be confidently recommended, and the bread and biscuits are to be obtained from most bakers and grocers, or from the manufacturers, Humphries & Bobbett, Bristol, England.

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Lunatic and Idiot Asylums and Homes for Inebriates in Great Britain and Ireland.

We are very anxious to make this list complete, and to give all necessary information; but unless our circular of enquiry—which in every case is stamped for reply—is promptly returned, we cannot undertake the responsibility of inserting particulars of an Establishment which may have been closed.

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See also p. 787

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See also p. 787.

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See also p. 785.

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See also p. 773.

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Vine Cottage, Norwood Green, Southall. Prop., Mrs. Oliver. Med. Supt., Dr. H. J. Thornton. Access—Southall station, 1 mile.

Londonderry.—District Asylum. Res. Med. Supt., Dr. Hetherington. Access—Londonderry, 1 mile.

Macclesfield.—Parkside Asylum. Res. Med. Supt., T. Steele Sheldon, M.B., Lond. Access—Macclesfield station, 1 mile.

Maidstone.—Kent County Asylum. Res. Med. Supt., F. P. Davies, M.D. Access—Maidstone sta., $1\frac{1}{2}$ miles.

West Malling Place (for ladies). Castle House and Winthies Cottage (for gentlemen). Res. Med. Supt., Dr. James Adam. Access—Malling station, 1 mile.

Market Lavington (Wilts).—Fiddington House. Prop. and Res. Med. Supt., C. Hitchcock, M.D. Access—Devizes, 6 miles.

Maryborough (Queen's County).—District Asylum. Res. Med. Supt., Dr. J. H. Hatchell. Access—Maryborough, $\frac{1}{2}$ mile.

Melrose, N.B.—Roxburgh District Asylum. Res. Med. Supt., J. C. Johnstone, M.D. Access—Melrose, 1 mile.

Melton.—Suffolk County Asylum, near Woodbridge. Res. Med. Supt., J. R. Whitwell, M.B. Access—Melton station, $1\frac{1}{4}$ mile; Woodbridge station, $2\frac{1}{4}$ miles.

Monaghan (Ireland).—District Asylum. Res. Med. Supt., Dr. Edward Taylor. Access—Monaghan, $\frac{1}{4}$ mile.

Montrose, N.B.—Montrose Royal Lunatic Asylum. Phys. Supt., John G. Havelock, M.D. Access—Hillside station, $\frac{1}{4}$ mile; Dubton station, 1 mile.

Morpeth.—Northumberland County Asylum. Res. Med. Supt., Thos. W. McDowall, M.D. Access—Morpeth station, 1 mile. by 'Bus.

Mullingar.—District Asylum. Res. Med. Supt., Dr. A. D. Finegan. Access—Mullingar sta., 1 mile.

Nelson (Lanc.).—Marsden Hall (both sexes). Res. Prop., Mrs. Bennett. Med. Supt., Dr. A. P. Millar. Access—Nelson or Colne sta., $1\frac{1}{2}$ miles. *See also p. 785.*

Newcastle-on-Tyne.—City County Asylum, Gosforth. Res. Med. Supt., Jas. T. Calcott, M.D. Access—Newcastle, 4 miles.

Newton-le-Willows (Lanc.)—Haydock Lodge Asylum. Med. Prop., E. H. Beaman, M.R.C.S., Edin. Res. Med. Supt., Dr. C. T. Street. Access—Newton-le-Willows sta., 2 mls. *See also p. 788*

Northampton.—Berrywood Asylum. Res. Med. Supt., R. Greene, F.R.C.P., Access—Castle station, 2 miles; Midland station, $2\frac{1}{2}$ miles.

St. Andrew's Hospital. Med. Sup., J. Bayley, M.R.C.S.

Norwich.—Heigham Hall. Lics., Mrs. Watson and Mr. A. Mottram. Res. Med. Supt., Dr. A. McWilliam. Access—Norwich sta., $\frac{1}{4}$ mile; Thorpe sta., $1\frac{1}{2}$ miles.

Norfolk County Asylum, Thorpe. 850 beds. Res. Med. Supt., D. G. Thomson, M.D. Access—Thorpe station, $2\frac{1}{2}$ miles.

Norwich City Asylum, Hellesdon, near Norwich. Res. Phys. and Supt., Wm. Harris, M.D. Hon. Con. Phys., Sir F. Bateman, M.D. Res. Asst. Med. Off., Dr. A. Sykes. Access—Thorpe, cab 4/-; Victoria station, cab, 3/6; City station, 3/-; Hellesdon sta., 1 mile.

The Bethel Hospital for the Insane. Res. Med. Supt., J. Fielding, M.D. Con. Phys., Sir F. Bateman, M.D. Access—Thorpe sta., 1 mile.

Nottingham.—City Asylum, Mapperley Hill. Med. Supt., E. Powell, M.R.C.S.

Notts County Asylum, Snenton. Res. Med. Supt., Dr. A. Aplin. Access—M. & G.N. station, 15 minutes.

The Coppice. Res. Med. Supt., W. B. Tate, M.D. Access—Mid. and Great Northern station, $2\frac{1}{2}$ miles.

Omagh.—District Asylum. Res. Med. Supt., Geo., E. Carre, M.B. Access—Omagh station, 2 miles.

Oxford.—Oxford County Asylum. Res. Med. Supt., R. H. H. Sankey, M.R.C.S. Access—Littlemore station, G.W.R.

Warneford Asylum, Oxford, $1\frac{1}{2}$ miles (for private patients only). Res. Med. Supt., James Neil, M.D. Access—Oxford station, $2\frac{1}{4}$ miles. *See also p. 789.*

Paisley.—Abbey Parochial Asylum. Med. Supt., T. Graham, M.D.

Parochial Asylum, Riccartbar. Med. Off., D. Fraser, M.D.

Perth.—District Asylum, Murthly. Res. Med. Supt., Dr. G. M. Robertson, M.B. Access—Murthly.

James Murray's Royal Asylum (for private patients only), Perth. Access—Perth, under 2 miles.

See also p. 787.

Plymouth.—Plympton House, Plympton, S. Devon. Res. Med. Supt., Charles Aldridge, M.D. Access—Plympton, 1 mile; Mills, 2 miles.

See also p. 788.

Portsmouth.—Borough Asylum, Res. Med. Supt., B. H. Mumby, M.D., D.P.H. Access—Fratton station, $1\frac{1}{2}$ miles.

Prestwich (near Manchester).—County Asylum. Res. Med. Supt., Henry Rooke Ley, M.R.C.S.

Rainhill (nr. Liverpool).—County Asylum. Res. Med. Supt., J. Wigglesworth, M.D. Access—St. Helen's, $2\frac{1}{2}$ miles; Rainhill station, 1 mile.

Rotherham (Yorkshire). The Grange, near Rotherham, 5 miles from Sheffield (for ladies). Res. Med. Prop., C. Clapham, M.D. Access—Grange Lane station, $\frac{1}{4}$ mile. *See also p. 786.*

Salisbury.—Fisherton House Asylum. Med. Supt., W. C. Finch, M.D. Access—Salisbury Station, 5 minutes.

Laverstock House. Prop., J. Haynes; Med. Supt., Hy. J. Manning, M.R.C.S.

Shrewsbury.—Salop and Montgomery Counties Asylum. Res. Med. Supt., A. Strange, M.D. Access—Shrewsbury station, $2\frac{1}{2}$ miles.

Sligo.—District Asylum. Res. Med. Supt., Dr. Joseph Petit. Access—M., G.W. and Sligo, Leitrim and N. Counties Rly., Sligo sta., $1\frac{1}{2}$ miles.

Stafford.—County Asylum. Res. Med. Supt., Dr. J. W. S. Christie. Access—Stafford, 1 mile.

- Institution for the Insane, Coton Hill. Res. Med. Supt., Dr. R. W. Hewson. Access—Stafford, 1 mile.
- Starcross** (near Exeter).—Western Counties Idiot Asylum. Res. Supt., Wm. Locke. Access—Starcross station, 5 minutes.
- Stirling**.—District Asylum. Med. Supt., Dr. J. MacPherson.
- St. Leonards-on-Sea**.—Ashbrook Hall, Hollington (for ladies). Res. Props., Mrs. Hitch and Miss Adams. Med. att., Dr. Edgar Duke. Access—Sta., Warrior Square, St. Leonards, 2 miles.
- Stone** (near Aylesbury).—Bucks County Asylum. Res. Med. Supt., J. Humphry, M.R.C.S. Access—Aylesbury station, $3\frac{1}{4}$ miles.
- Sutton** (Surrey).—Chalk Pit House (for 3 lady patients). Prop., F. D. Atkins, M.R.C.S.
- Tamworth** (Staffs.).—The Moat House (for ladies). Res. Prop., E. Hollins, M.A. Med. Attnds. J. Holmes Joy, M.D., and H. H. Rubra, L.R.C.P. Access—Tamworth, $\frac{3}{4}$ mile. *See also p. 796.*
- Ticehurst** (Sussex).—Asylum. Props., H. F. H. Newington, M.R.C.P., and A. S. L. Newington, M.B.
- Tonbridge**.—Redlands. Res. Med. Supt., W. A. Harmer. Access—Tonbridge junction, S.E.R., $2\frac{1}{2}$ miles.
- Virginia Water**.—Holloway Sanatorium, Hospital for the Insane. St. Ann's Heath. Res. Med. Supt., S. R. Philipps, M.D. Asst. Med. Offs., W. D. Moore, M.D., T. E. Harper, L.R.C.P., Rosina C. Despard, M.B., and N. E. Thomas, L.R.C.P. Access—Virginia Water sta., 5 minutes. Seaside Branch, Hove Villa, Dyke Rd., Brighton. Med. Officer, E. N. Edwards, M.R.C.S.
- Wadsley** (near Sheffield).—South Yorkshire Asylum. Res. Med. Supt., W. S. Kay, M.D. Access—Wadsley Bridge, 2 miles.
- Wakefield**.—West Riding Asylum. Res. Med. Supt. and Director, W. Bevan Lewis, L.R.C.P., Lon. Access—Kirkgate and Westgate station, 1 mile.
- Wallingford** (Berks).—Berks County Asylum. — Res. Med. Supt., J. W. A. Murdock, M.B. Access—Cholsey, 1 mile.
- Warwick**.—Midland Counties Idiot Asylum, Knowle. Res. Supt. and Sec., W. G. Blatch. Med. Off., R. H. Foster, M.R.C.S. Access—Knowle station, $\frac{1}{2}$ mile.
- Waterford**.—District Asylum. Res. Med. Supt., Dr. R. Atkins. Access—Waterford and Kilkenny sta., 2 miles.
- St. Patrick's Inst., Belmont Park. Supt., Br. W. J. Becker. Med. Supt., Dr. W. R. Connolly.
- Wells**.—Somerset and Bath Asylum, Wells, Somerset. Res. Med. Supt., A. Law Wade, M.D. Access—Wells, 2 miles; Masbury $2\frac{1}{2}$ miles.
- Whitchurch** (Salop).—St. Mary's House (ladies only). Res. Med. Supts., S. T. Gwynn, M.D., and C. H. Gwynn, M.D. Access—Whitchurch station, 1 mile.
- Whitefield** (near Manchester).—Overdale. Res. Med. Supt., J. Holmes, M.D. Access—Prestwich and Whitefield sta., $1\frac{1}{2}$ miles; Molyneux Brow, $\frac{1}{4}$ mile.
- Whittingham** (near Preston).—County Asylum. Res. Med. Supt., Dr. Frank Perceval. Access—Grimsargh station, $1\frac{3}{4}$ miles; Whittingham station, 3 minutes.
- Winchelsea** (Sussex).—Periteau House, near Hastings (5 ladies). Prop., Mrs. R. V. Skinner. Med. Supt., E. W. Skinner, M.D. Access—Winchelsea sta., 1 mile.
- Woking**.—Surrey County Asylum, Brookwood. Res. Med. Supt., Dr. J. E. Barton. Access—Brookwood station, $1\frac{1}{4}$ miles.
- Worcester**.—County and City Lunatic Asylum, Powick. Res. Med. Supt., E. M. Cooke, M.B. Access—Worcester $4\frac{1}{2}$ miles.

York.—Lawrence House (for 8 males and 14 females). Prop. and Med. Supt., G. I. Swanson, M.D. Access—York.

The Friends' Retreat. Res. Med. Supt., Bedford Pierce, M.D. Access—York, 1 mile.

North Riding of Yorkshire Asylum. Res. Med. Supt., J. Tregelles Hingston. Access—York, 2 miles.

York Lunatic Asylum, Bootham. Res. Med. Supt., C. K. Hitchcock, M.D. Access—York, 1 mile.

TRAINING INSTITUTIONS.

Bath.—Rock Hall House, Coombe Down, near Bath. A training inst. for backward and imbecile children. Lady Supt., Miss Jane Quinton. Med. Off., J. H. H. Lawrence, M.R.C.S.

Chilcompton (nr. Bath).—Downside Lodge. Med. Supt., Alex. Waugh, M.D. Access—Chilcompton, about $\frac{1}{2}$ mile. *See also p. 796.*

Dublin.—Stewart Institution, Palmerston, Chapelizod, Co. Dublin. For imbecile children. Med. Supt., Dr. F. Pim.

Dundee.—Baldovan Asylum, For the Training and Education of Imbecile Children. Matron, Miss Butter. Vis. Phys., Dr. Greig. Access—Baldovan, 1 mile.

Kingston-on-Thames (Surrey).—Conifers, for the Education and care of Girls needing special oversight under medical guidance. Med. Supt., Dr. Langdon Down. Access—Hampton Wick station. 8 minutes. *See also p. 794.*

Normansfield. A Training Institution and Home for backward and feeble-minded children and adults of either sex. Med. Supt., Dr. Langdon Down. Access—Hampton Wick, 5 minutes.

See also p. 794.

Somerleyton. For Education of a few Boys of good social position, subject to epilepsy without mental complications, under guidance. Access—Hampton Wick, 10 mins.

Trematon. For the Education of Boys unsuited by mental or moral weakness for an ordinary school. Med. Supt., Dr. Langdon Down. Access—Hampton Wick 5 minutes. *See also p. 794.*

Winchester House, Kingston Hill. For backward and feeble-minded Children. Res. Med. Supt. Dr. Fletcher Beach. Access—Norbiton, S.W.R., 15 min. *See p. 797.*
Lancaster.—Royal Albert Asylum (for idiots and imbeciles of the Northern Counties. 600 patients). Principal and Sec., Jas. Diggins. Res. Med. Supt., T. Telford-Smith, M.A., M.D. Admission by election, or at various rates of payment. Access—Lancaster, 1 mile.

Brunton House. A Home for special Private Pupils under training at the Royal Albert Asylum. Private Pupils received from all parts of the country. Prin., and Sec., James Diggins. Access as above. *See also p. 797.*

Larbert (Stirlingshire).—Scottish Nat. Inst. Med. Supt., A. A. Skene. Access—Larbert, $\frac{3}{4}$ mile.

Maidstone (Kent).—Bearsted Hse. School and Home for the Feeble-minded. Res. Supt. and Prop., G. T. A'Vard. Access—Bearsted, C. and D.R., 5 mins. *See also p. 795.*
Polton (Midlothian).—Mavisbush. Home and School for Imbeciles. Res. Med. Supt., W. W. Ireland, M.D. Access—Polton.

Richmond (Surrey).—Ancaster House, Richmond Hill. A small and select Educational Home for backward and mentally feeble children (*not* idiots). Res. Med. Supt., G. E. Shuttleworth, M.D. Access—Richmond, S.W.R., M.D. & N.L.R., 1 mile. *See also p. 796.*

Southgate (Middlesex).—Brook House. For Education & Training of the nervous and backward. Res. Med. Prop., Harry Corner, M.D.

Inebriate Homes.

LICENSED UNDER THE ACTS

The patient must sign a Form expressing a wish to enter the Home, before two magistrates. This can be done at the private residence of the patient, or at the retreat, if previous notice has been given. Two friends must also sign a declaration that they consider the patient an "Inebriate" within the meaning of the Acts

* NOTE:—Bedfont and Chiswick are Roman Catholic Religious Institutions.

MALES ONLY.

Bristol.—Kingswood Park (Patients 18). Res. Med. Supt., Henry Summerhayes, M.R.C.S. Res. Supt., L. W. Brimacombe. Access—Mangotsfield 2 miles; Bristol, 4 miles; Bath, 8 miles.

Folkestone.—Capel Lodge (Patients 10). Res. Prop., E. Norton, M.D. Access—Folkestone Junction, 2 miles.

Kingsland (Herefordshire).—Street Court (Patients 10). Res. Med. Supt. and Partner, Dr. W. F. Walker, J.P. Access—Kingsland station, $1\frac{1}{2}$ miles; Leominster, 6 miles.

Rickmansworth (Herts).—Dalrymple Home (Patients 20). Res. Med. Supt., R. Welsh Branthwaite, M.D. Access—Rickmansworth station, Metropolitan Railway, $\frac{1}{2}$ mile; L. and N.W. Railway, 1 mile.

See also p. 791.

Sutton Coldfield (Warwickshire).—Little Aston Hall (Patients 10). Res. Med. Supt., Fredk. John Gray, M.D. Access—Sutton, 4 miles; Walsall, 6; Birmingham, 11 miles.

See also p. 790.

Twickenham.—High Shot House, (Patients 12). Res. Med. Supt., F. H. Bromhead, B.A., M.B. Camb., M.R.C.S. Eng., L.R.C.P. Lond. Access—St. Margaret's station from Waterloo, 300 yards.

See also p. 791.

MALE OR FEMALE.

Amesbury (Wilts).—Amesbury House (Patients 3). Res. Supt. and Med. Officer, P. J. Barcroft, M.R.C.P., F.R.C.S. Access—Salisbury, 8 miles; Porton station, 4 miles.

See also p. 791.

Westgate-on-Sea.—Tower House Retreat (Patients 20). Prin. and Lic. A. F. Street, M.A., M.D. Access—Westgate-on-Sea, 5 mins.

FEMALES ONLY.

Bedfont (Middlesex).*—Spelthorne St. Mary (Patients 10). Supt., Sister in Charge. Med. Supt., H. W. Newton, M.R.C.S. Access—London, $11\frac{1}{2}$ miles; Feltham, S.W. Rly., 1 mile.

Bristol.—Royal Victoria Home, Horfield (Patients 40). Res. Supt., The Warden. Med. Officers, J. E. Prichard, M.B.; Wm. Cotton M.D. Access—Ashley Hill, Montpelier, and Redland stations, 10 minutes; Bristol (Temple Meads) $3\frac{1}{4}$ miles.

See also p. 793.

Chiswick.*—St. Veronica's Retreat (Patients 40). Under the care of the Sisters of Nazareth. Med. Supt., John J. Atteridge, M.D. Access—Chiswick station, $\frac{1}{2}$ mile.

Fallowfield.—The Grove, near Manchester (Patients 25). Res. Supt., Miss E. Pritchard. Med. Offs. A. T. Wilkinson, M.D. and J. W. Hamill, M.D. Access—Fallowfield, 10 minutes.

UNLICENSED HOMES.

FEMALES ONLY (*except Bristol*).

Beckenham (Kent).—41, Manor Road. Supt., The Matron
Bristol.—Dunmurry, Sneyd Park, near Clifton. Res. Med. Prop., Jas. Stewart, B.A., F.R.C.P. Ed., and Mrs. Stewart. Access—Bristol or Clifton Down sta., $1\frac{1}{4}$ mile from the latter. *See also p. 792*

Croydon.—St Raphael's, Woodside. Supt., The Matron. Access—Woodside station, Croydon.

Dulwich.—Ellison Lodge, Half Moon Lane. Sec., Miss Forsyth, 26, Fulham Road, S.W. Res. Supt. Miss Hogg.

Edinburgh.—Queensbury Lodge. Supt., Major M'Carthy. Med., Supt., Dr. William Russell. Access—Waverley station, $\frac{1}{2}$ mile.

Hounslow (Middlesex).—West Holme. Supt., Matron in Charge. Med. Supt., Dr. G. A. S. Gordon. Access—Richmond (Surrey), 4 miles; Staines (Middlesex), 4 miles; Hounslow. (S.W.R.), $\frac{3}{4}$ Dist. R. $\frac{1}{4}$ mile.

Huddersfield (Yorks).—High Flatts Sanatorium. Supt., The Matron. Access—Denby Dale station, 3 miles; Penistone stat., $3\frac{1}{2}$ miles.

Leicester.—Melbourne House. Prop., Mr. H. M. Riley. Med. Supt., C. J. Bond, F.R.C.S. Station, 2 miles. *See also p. 792*
 Tower House Prop., Mrs. Theobald. Med. Supt., Dr. Clarke. Access—Leicester station, $1\frac{1}{2}$ miles. *See also p. 792.*

Liverpool.—Temperance Home, 318, Upper Parliament Street. Supt., Miss A. J. Wilson.

Musselburgh (N.B.).—View Mount, Lavenhall. Apply to the Manager.

Reigate (Surrey).—Duxhurst. Supt., Sister in charge. Med. Supt., A. Walters, M.R.C.S. Access—Reigate, 4 miles. *See also p. 792.*

Stonehaven (N.B.).—Elsick House. Prop., D. Forbes.

Sydenham.—The Tor. Hon. Sec., Mrs. Atkinson. Med. Supt., Dr. Gardner.

Torquay.—Temple Lodge. Supt., The Matron

West Derby (near Liverpool).—Vergmont Sanatorium. Supt., Miss Mary M. Hocking. Hon. Med. Offis., Dr. H. Harvey and Dr. C. Thurstan Holland. Access—West Derby, $\frac{1}{2}$ mile; Tue Brook, $\frac{1}{4}$ mile, Edge Hill, 3 miles.

Hydropathic Establishments of Great Britain.

We wish to make this list complete, but it is impossible when some Proprietors do not return our letter of enquiry which is *stamped for reply*. This will account for some omissions in the present edition.

Aberdeen.—Deeside Hydropathic, Heathcot, near Aberdeen. Res. Med. Supt., Alex. Stewart, M.D., LL.D., F.S.Sc. Access—Rail to Aberdeen, thence by cab or omnibus. Hydropathic conveyance meets any train when sent for, distance 5 miles. *See also p. 802.*

Baslow.—Baslow Hydropathic, near Chatsworth Park. Res. Med. Supt., E. M. Wrench, F.R.C.S. Access—Bakewell, 4 miles by 'bus.

Bath.—Lansdown Grove House, Lansdown, Bath. (Invalids only). Access—Mid. or G.W. sta, Bath, about 1 mile. *See also p. 800.*

- Ben Rhydding.**—Ben Rhydding. Near Leeds, Bradford, or Harrogate. Phys. Thos. Johnstone, M.D. Access—Station, a few hundred yards.
- Bishops-Teignton (near Teignmouth).**—The South Devon Health Resort. Prop., C. F. Carpenter. Med. Supt., J. Wood, M.B. Access—Teignmouth, $2\frac{1}{2}$ ml.
- Blackpool.**—Bramald's Hydropathic, 2, Brunswick St. Prop., W. Bramald. Access—4 minutes from Central station.
- Bournemouth (Hampshire).**—Bournemouth Hydropathic Res. Prop., W. J. Smyth, M.D. Access—East sta. $1\frac{1}{4}$ mile; West sta. $\frac{1}{2}$ mile.
Southcliffe Res. Manager, E. P. Philpots, M.D.
- Bridge of Allan.**—Bridge of Allan Hydropathic Co. Man, H. B. Higgins. Access—Station, $\frac{1}{2}$ mile.
- Bristol.**—The Bristol Hydropathic. (formerly Bartholomew's Turkish Baths), College Grn. Res. Phys., W. J. Spoor, M.B., M.R.C.S.
- Bute.**—Kyles of Bute Hydropathic, Port Bannantyne. Man., A. Menzies. Med. Supt., Dr. A. J. Hall. Access—Clyde steamers call daily.
- Buxton.**—Buxton House Hydropathic, adjoins "The Peak Hydro." Cons. Phys., S. Hyde, M.D. Station, 4 minutes.
Buxton Hydropathic & Winter Residence. Prop., Mr. H. Lomas. Access—Station, 4 minutes.
- Clevedon (near Bristol).**—Clevedon Hydropathic. Supt., R. P. Morgan. Access—Clevedon, $\frac{1}{2}$ mile.
- Clifton (near Bristol).**—Clifton Spa & Hydropathic. Res. Phys. C. J. Whitby, M.D. Access—Clifton Down station, 1 mile.
See also p. 801.
- Colwyn Bay (North Wales).**—Colwyn Bay Hydropathic and Winter Residence. Med. Supt., Dr. W. M. V. Williams. Access—Colwyn Bay station, 7 minutes.
- Cork.**—St. Ann's Hill Hydropathic. Res. Phys., M. Altdorfer, M.D. Access—Blarney Station, $2\frac{1}{2}$ miles. Muskerry Light Railway from Cork, station on grounds.
See also p. 805.
- Crieff.**—Strathearn House (17 miles from Perth). Res. Med. Supts., Thos. H. Meikle, M.D., J.P., and T. Gordon Meikle, M.B., C.M. Access—Crieff station, 1 mile.
- Dunblane.**—Dunblane Hydropathic, Perthshire. Res. Phys. Access—Dunblane. *See also p. 798.*
- Eastbourne.**—The Eastbourne Hydropathic, South Cliff. Cons. Phys., Henry Habgood, M.D. Access—Eastbourne.
- Edinburgh.**—Hydropathic. J. Bell, Man. Dir. Access—Merchiston, 1 mile; Waverley, 3 miles.
- Folkestone.**—Bathing Establishment Co., Limited.
- Forres.**—Cluny Hill Hydropathic. Access—Forres station, 1 mile; Inverness, 24 miles.
- Grange-over-Sands.**—Hazelwood Hydropathic. Phys., Richard Lowther, M.D. Access—Carnforth, L. & N.W.R., and thence by Furness Railway. Grange-over-Sands, $\frac{1}{4}$ mile. *See also p. 803.*
- Harrogate (Yorkshire).**—Harlow Manor Hydro. Man. Mr. Fenn, Med. Supt., Dr. Dimmock.
The Cairn Hydropathic. Near Leeds and Bradford. Man., Mr. Alderson. Access—Harrogate, 1 ml.
The Harrogate Hydropathic Phys., Geo., Tennant, M.B. Access—Harrogate, $\frac{1}{2}$ mile.
- Hastings (St. Leonards).**—The Hastings Hydropathic and Spa. Access—Hastings station, 1 mile.
- Hexham (Northumberland).**—Tyndale Hydropathic. Prop., F. G. Grant. Med. Supts., Thos., Stainthorpe, M.D. and Dr. Stewart. Access—Hexham, 1 mile; Newcastle, 19 miles.
- Ilkley (Yorkshire).**—Craiglands Hydropathic, Props., Dobson, Bros. Res. Med. Supt., Henry Dobson, M.D., C.M.

- Ilkley Wells House Hydro-
pathic.** Med., Supt. Thos. Scott,
M.D. Access—Ilkley station, $\frac{1}{4}$
mile.
- The Spa Hydropathic. Near
Leeds and Bradford. Med. Supt.,
Thos. Johnstone, M.D. Access—
Ilkley, Yorks, M., G.N. & N.E.R.,
Ilkley, 3 minutes.
- Kilmalcolm (Renfrewshire).**—
Hydropathic, Manageress, Miss
G. Thomson. Access—Greenock,
7 miles; 16 miles from Glasgow,
S.W.R.
- Limply Stoke (near Bath).**—
West of England Hydropathic.
Res. Med. Supt., T. G. Drake,
L. R. C. P. Access—Limply
Stoke station.
- Llandudno.**—Hydropathic and
Winter Residence. Med. Supt.,
James Craig, M.B. Access—
Llandudno Station, 5 minutes.
- Malvern.**—The Malvern Hydro-
pathic (late Dr. Rayner's). Res.
Prop., J. C. Fergusson, M.D.
Access—Gt. Malvern station, $\frac{1}{2}$
mile. *See also p. 805.*
- Wyche-side Hydropathic. Res.
Phys., Dr. Grindrod. Access—
Malvern Wells G.W.R., $\frac{1}{2}$ mile.
- Matlock.**—Darley Dale Hydro-
pathic. Prop., Wm. Atkin. Med.
Supt., Dr. W. Moxon. Access—
Matlock Bridge station, $1\frac{3}{4}$ mile;
Darley Dale, $\frac{1}{2}$ mile.
- Matlock House Hydropathic.
Matlock Bank. Med. Supt., W.
Moxon, M.D., M.R.C.S. Access—
Matlock Bridge (M.R.), $\frac{1}{4}$
mile. *See also p. 804.*
- Smedley's Hydropathic, Mat-
lock Bridge. Phys., W. C.
Sharpe, M.B., with a House Phys.
Access—Matlock Bridge station,
 $\frac{1}{2}$ mile; Omnibus. *See also p. 799.*
- Melrose—Waverley Hydropathic.**
Con. Phys., Dr. Wade. Access—
Melrose station, 1 mile.
- Moffat.**—The Moffat Hydropathic.
Prop., J. Farquharson. Med.
Supt., Dr. T. B. White.
- Peebles.**—Peebles Hydropathic.
Access—Peebles station, 1 mile.
- Pitlochry.**—Atholl Hydropathic.
Prop., W. Macdonald. Access—
Pitlochry station, 1 mile.
- Rhyl.**—North Wales Hydropathic.
Med. Supt., Dr. R. M. Pritchard.
Access—Rhyl station, 5 minutes.
- Rothsay.**—Glenburn Hydro-
pathic. Res. Phys., Dr. Philp.
See also p. 798.
- Scarborough.**—Hydropathic, West
Bank. Prop., R. B. D. Wells.
Med. Atten., Dr. Megginson. Ac-
cess—Scarborough station (N.E.
Ry.), $\frac{1}{4}$ hour. *See also p. 800.*
- Shandon.**—Shandon Hydropathic.
Med. Supt., Dr. Douglas Reid.
Access—N.B.R. and Steamer.
- Southport (Birkdale Park).**—
Smedley Hydropathic. Med.
Supt., J. G. G. Corkhill, M.B.,
B.Ch. Vict., M.R.C.S. Eng. South-
port $1\frac{1}{2}$ miles; Birkdale, $\frac{1}{2}$ mile.
See also p. 802.
- “Sunnyside” Hydropathic.
Prop., J. Boocock. Phys., Dr.
F. A. Ernest Barnardo. Access
—Southport stations, about $\frac{1}{2}$ mile.
See also p. 804.
- The Southport Limes Hydro-
pathic (51, Bath St.). Phys., Dr.
A. B. Kenworthy. Access—Chapel
St., Lord St. or Central sta. $\frac{1}{4}$ mile.
- Tunbridge Wells.**—The Spa.
Phys., Dr. G. L. Pardington.
Access—Station, about $\frac{1}{2}$ mile.
See also p. 804.
- Ulverston and Barrow-in-Fur-
ness.**—Conishead Priory Hydro-
pathic. Res. Med. Supt., C. E.
Stechan, M.B. Access—Carn-
forth or Hellifield stations.
- Watford.**—The Hall, Bushey. Res.
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Access—L. & N.W.Ry. 1 mile.
- Wemyss Bay.**—Wemyss Bay Hy-
dropathic. Med. Sup., Ronald
Currie, M.D. Access—Wemyss
Bay sta., $\frac{1}{2}$ mile.
- Windermere.**—Windermere Hy-
dropathic, 9 miles from Kendal.
Access—Windermere (L. & N.W.
R.) 1 mile. Furness Rly. (Bow-
ness Landing), $\frac{1}{4}$ mile. Pier on
Lake, about 300 yards.

Private Homes for Invalids.

Hadlow Down (Buxted, Sussex.)
—South Beacon. Prop., Philip
H. Harmer. See also p. 790.

Jedburgh.—Abbey Green. Res.
Prop., Wm. Blair, M.D. Access—
N.B.R., Jedburgh. See also p. 777.

Nursing Institutions and Associations.

The information given here is necessarily brief: but further particulars may be added, in small type, at the rate of 2/- per dozen words.

LONDON.

Belgravia Nursing Home, 39 and
41, Royal Avenue, Chelsea, S.W.
Principals—Mrs. Walter Pye and
Mrs. Richard Crawley.

Surgical, Medical (non-infectious),
Confinement, & Weir-Mitchell cases
received. Terms from 4 to 12 guineas
per week. Fully qualified Nurses
also sent out.

Blackheath Nursing Instit., 9,
Montpelier Row, Blackheath, S.E.
Supt.—Miss Duncan.

Camberwell District Nursing
Assoc. for Nursing the Sick Poor
Free of charge. Burton Road,
Brixton. Supt.—M. Dodds.

Colonial Nursing Assoc., Imperial
Institute, London, S.W. Hon.
Sec., Mrs. Francis T. Piggott.

General Nursing Institute, 5,
Mandeville Place, Manchester
Square, W.

Guy's Hospital Trained Nurses'
Inst., 14, St. Thomas Street, S.E.

Haggerston and Hoxton District
Nursing Assoc., 80, Nichols Sq.,
Hackney Road, N.E. Supt.—
Miss A. Wells.

Hamilton Assoc. for Providing
Trained Male Nurses, 57, Park
St., Grosvenor Sq., W. Supt.—
G. H. Henlen. See also p. 778.

Hampstead Hospital Nursing
Staff, Parliament Hill, N.W.
Lady Supt., Mrs. Ebbetts.

Hanover Inst. for Nurses and
Private Hosp., 22, George St.,
Hanover Square, W. Lady
Supt., Miss Sophia Walker.

See also p. 775.

Holy Cross Society of Trained
Nurses, Ladbroke House, Lad-
broke Road, Notting Hill, W.
Lady Supt., Sister Clare.

Medical, Surgical, Monthly, Fever
and Massage Nurses, sent to any
part.

Hospital for Sick Children, Pri-
vate Nursing Home, Gt. Ormond
St., W.C. Matron, Miss Gertrude
Payne.

Ings House Nurses Co-operation,
81, New Bond Street, W.

Kensington District Nursing
Assoc. for Nursing the Sick Poor
in their own Homes, 1, Bedford
Gardens, W. Lady Supt., Miss
Brooke.

London Association of Nurses,
123, New Bond St., W. Lady
Supt., M. Firth.

London Homœopathic Hospital
Nursing Inst., Great Ormond
St., W.C. Lady Supt., Miss Brew.

London Hospital Private Nursing
Inst., Whitechapel Road, E.
Matron, Eva C. E. Luckes.

Male Nurses (Temperance) Co-
operation, 10, Thayer St., Man-
chester Sq., W. Sec., F. Rouse.
See also p. 777.

Maternity, Charity and District
Nurses' Home, Howard Road,
Plaistow, E. Monthly Nurses
only supplied. Matron, Miss K.
Twining.

Metropolitan Nursing Assoc., 23,
Bloomsbury Sq. Supt., Miss
Gray.

Middlesex Hospital Institute,
17, Cleveland Street, W.

Midwives' Inst., 12, Buckingham St., Strand, W.C. Apply Secretary.

Midmay Deaconess Inst., Nursing branch, 9 & 10, Newington Green, N. Supt., Miss Dean.

Trained Sisters and Nurses are sent to private families, on application to Resident Superintendent, as above.

See also p. 776.

North London Nursing Assoc. for the Poor, 413, Holloway Road, N. Supt., Miss Meyer.

Nursing Inst., 39 & 41, Boundary Road, N.W.

Nursing Sisters' Inst., 4, Devonshire Sq., E.C. Lady Supt., Miss Steuart.

Paddington and Marylebone District Nursing Association, 4, Randolph Road, W. Supt. Miss K. Perssé. Sec., Mr. F. Richmond.

Pembroke Nursing Inst. and Home for Paying Patients, 116, Adelaide Road, N.W. Matron, S. Gee Wright, cert. L.O.S.

Piccadilly Association of Trained Nurses, 184, Piccadilly, W.

Queen Victoria's Jubilee Inst. for Nurses, St. Katherine's Royal Hospital, Regents Park, N.W. For supplying trained District Nurses for the Poor. Sec., A. M. Leake.

Registered Nurses' Society, 269, Regent Street, W. Sec., Miss Cartwright.

Royal British Nurses Assoc., 17, Old Cavendish Street, W.

St. Bartholomew's Hosp. Nurses Institute, 13, West Smithfield.

St. John's, 21, Drayton Gardens, S. Kensington. Sist. Supt., J. Manners.

St. John Ambulance Association, St. John's Gate, Clerkenwell.

St. John's House, 7 & 8, Norfolk St., Strand. Supt., the Sister Superior. Sec., G. Frere, Esq.

Southwark, Newington & Walworth District Nursing Assoc. 37, West Sq., S.E. Supt., L. L. Ward

Up-Country Nursing Assoc. for Europeans in India. Hon. Sec., Major-Gen. J. Bonus, R.E., 4, The Cedars, Strawberry Hill.

Victoria Hospital, Nursing Staff, Chelsea, S.W. Matron, Miss Hamilton.

West Middlesex Inst. for Hosp. Trained Nurses, Cumberland Park, Acton. Apply, Secretary.

Westminster Home for Nurses, 27, Queen Anne's Gate, S.W. Supt., Miss Payne.

Weston's (Mrs.) Medical and Surgical Home and Nurses' Inst., Blenheim House, Kew Rd., Kew Grdns. Supt., Mrs. Weston.

Wigmore Nurses' Co-operation, 59, Weymouth St., W. Princ., Florence Burrell.

Three years' Hospital Trained and Certificated Nurses sent to all cases. Telegrams: "Trained, London." Telephone No. 562 (Paddington).

PROVINCIAL.

Ayr.—Ayr, Newton, and Wallace-town Sick-Poor Nursing Assoc., 22, Academy St. Sec., Mrs. Hutton.

Bath.—Home for Trained Nurses, 44, Rivers St. Lady Supt., Miss F. E. Latham.

Royal United Hospital Private Nursing Inst., Lady Supt., Mrs. Mathias.

Belfast.—Nurses' Home and Training School, Frederick St. Lady Supt., Miss Newman.

Birmingham.—Birmingham and Midland Homœopathic Hospital. Lady Supt., Miss Bean.

District Nursing Society, 98, Newhall St. Lady Supt., Miss Waller.

Queen's Hospital, External Nursing Depart. Supt., Charlotte Elkington.

Bournemouth. — Victoria and Bournemouth Nurses' Inst. and Home Hosp., St. Michael's Road. Branch Home, Wootton Lodge, Boscombe. Supt., Miss Forrest.

Bridlington. — Lloyd Cottage Hosp. Supt., Miss A. Maud Jones.

- Brighton.**—Home for Trained Nurses and Paying Patients, 92, King's Road, Supt. Mrs. Frazer. Sussex County Hospital Private Nursing Inst. Matron, Katharine Scott.
- Bristol.**—District and Private Nurses' Home, 6 Berkeley Sq., Clifton. Lady Supt., Florence E. Lloyd.
General Hospital.
Nurses' Co-operation & Home, Westbourne Place, Clifton. Supt. Miss Rogers. *See also p. 777.*
Nurses' Training Inst. & Home, 23 & 24, Richmond Ter., Clifton. Lady Supt. Mrs. Nolan.
Telephone No. 5555. Telegraphic Address: "Nurses, Bristol." Fully Trained Mental, Medical, Surgical, and Monthly Nurses. Surgical Patients received at from £4 4s. to £6 6s. weekly.
See also p. 777.
Royal Infirmary Private Nursing Inst. Matron, Miss M. E. Smith.
- Burton-on-Trent.**—Nursing Inst. Supt., Miss E. Carson.
Ordinary Cases, per week £1 1 0
Infectious " " £1 11 6
Monthly " four weeks £6 6 0
- Cambridge.**—Home for Nurses, 13, Fitzwilliam St. Lady Supt., Miss Rogers.
- Cheltenham.**—General Hospital Private Nursing Staff. Matron, Miss M. E. Howes.
Medical, Surgical and Monthly Nurses can be supplied, on application, by letter or telegram, to the Matron. Telephone No. 26.
- Chester.**—District Nurses' Home, Water Tower St. For providing Trained Nurses for the Poor in their own Homes. Sister-in-charge, Sister Mabel.
- Cork.**—County and City of Cork Hospital for Women and Children. Lady Supt., Miss M. H. Baxter.
Nursing Institution, 11, South Mall. Hon. Lady Supt., Miss Woodroffe.
- Coventry.**—District and Private Nursing Inst., Bishop St. Supt., Miss Wing.
- Derby.**—Royal Derby and Derbyshire Nursing Association, London Rd. Lady Supt., Miss Agnes Atthill.
- Devonport.**—Royal Albert Hosp. Nursing Inst. Matron, Miss Horner.
- Dublin.**—City of Dublin Nursing Inst., Ltd., in connection with City of Dublin Hosp., 27, Upper Baggot St. Lady Manager, Mrs. R. K. Tracy.
Dr. Steevens' Hospital Private Nursing Inst. Supt., Miss B. M. Kelly.
Rotunda Lying-in Hosp. Nursing Home, Great Britain St. Lady Supt., Miss Lucy Ramsden.
The charge for Maternity Cases is £1 5s. per week. For Operation or Mental cases £1 10s. per week. For twenty-four hours only, or less, the charge is 10s. Travelling expenses and washing to be paid for in addition. Salaries paid to Nurses in the private Staff from £20 to £25 per annum, uniform found.
- St. Patrick's Nurses' Home, 101, St. Stephen's Green, for supplying Trained Nurses to the Sick Poor in their own Homes free of charge. Supt., Miss F. Frances Howell.
- Edinburgh.**—Royal Scottish Nursing Inst., 69, Queen St. and 14, Castle St., Dumfries. Matron, Miss King.
- Exeter.**—Devon and Exeter Hosp. Lady Supt., Miss Pepper.
Trained Nurses' Inst. (founded 1866), Colleton House. Sec. and Supt., Miss M. Mathew.
- Frome.**—Home for Trained Nurses, South Parade. Supt., Miss M. I. Briggs.
- Gainsborough.**—District Nursing Assoc. 14, Kebir Ter. Two District Nurses (Sister Flora and Sister Edith).
- Glasgow.**—Hillhead Nursing Inst., 66, Craigmaddil Ter., Sandyford. Supt., Mrs. Campbell.
Fully trained Hospital Nurses supplied any time during the day or night. Telegraphic Address: "Sisters, Glasgow." Telephone No. 2175.

- Sick Poor and Private Nursing Association, 218, Bath St. Supt., Miss Lamont.
- Training Home for Nurses, 250, Renfrew St. Hon. Supt. Miss McAlpin.
- Guildford.—Nurses' Inst. & Home for Private Patients. Branch home, 13, Bulstrode St., W. Lady Supt., Miss E. Truscott.
- Harrogate.—Trained Nurses' Inst., Ripon Rd. Supt., Miss Anderson.
- Nurses supplied for all cases. Accommodation for two patients, Medical or Surgical.
- Haverfordwest.—Pembrokeshire & Haverfordwest Infirm. & Nursing Inst. Matron, Miss Ellen L. Bull.
- Hereford.—Nursing Assoc., for nursing the Poor free of charge in their own Homes.
- Honiton.—District Rural Nursing Assoc. for the Poor.
- Hull.—Royal Infirm. Lady Supt., Miss A. L. Cox.
- Leamington.—Warneford, Leamington and South Warwickshire Hosp. Supt., Miss K. Rapson.
- Leicester.—Nurses' Co-operation, Wellford Road. Supt., Mrs. W. J. Foster.
- Nurses' Inst. Aylestone Road. Lady Supt., Miss J. M. McHardy.
- Limerick.—Barrington's Hosp. and City of Limerick Infirm. Matron, Miss Haughton. Sec., R. R. Parsons, Esq.
- Lincoln.—Institution for Nurses. Lady Supt., Miss H. Bromhead.
- Liverpool.—Training School and Home for Nurses, Ashton Street. Supt. Miss Charlotte M. Bann.
- Manchester.—Maternity Hosp., 60, Upper Brook St. Matron, Miss Worrall.
- Middlesbrough.—Nursing Assoc., 91 & 93, Gunnergate Ter. Lady Supt., Miss Purvis.
- Newcastle-on-Tyne.—Nurses' Home and Training School, 2, Granville Road. Matron, Miss Emery.
- Newport.—Newport & Monmouthshire Hosp. Matron, Miss K. Hodgkin.
- Norfolk.—Norfolk and Norwich Hosp. Lady Supt. of Nurses, Miss A. S. Adam.
- Northallerton.—North Riding Rural Nursing Assoc., Home for Nurses, Cottage Hospital. Supt., Miss Georgina Atkinson.
- Ockley.—Nursing Assoc. Apply, the Secretary.
- Oldham.—Nursing Assoc., Lees' Nurse's Home, Union St., West Oldham. Supt., Mary J. Nicholson.
- Perth.—Nurses' Home. Lady Supt., Miss Græme.
- Portsmouth.—Royal Portsmouth Hosp. Matron, Miss M. L. Boulton.
- Preston.—Preston and County of Lancaster Royal Infirm. Private Nurses' Home. Matron, Miss Leslie. Supt., Miss A. M. Pigott.
- Reading.—Royal Berks Hospital, Private Nursing Staff. Supt., Eleanor J. Law.
- Rochdale.—District Nursing Assoc. 210, Yorkshire St.
- St. Leonard's-on-Sea.—Victoria Nursing Inst., 25, Warrior Gardens. Supt., Mrs. C. Phillips.
- Certificated Nurses sent any distance to any case on receipt of wire, stating sex and ailment of patient.
- Salisbury.—Nurses' Home. Supt., Ethel Laurence.
- Sheffield.—St. George's Home for Dist. & Private Nursing, 19, Sandon Pl. Lady Supt., M. E. Cowan, Nurses' Home and Training Inst., 334, Glossop Road, Lady Supt., Miss Annie Armstrong.
- Shepton Mallett.—Nursing Assoc. for the Poor. Hon. Sec., Agnes M. Sherring.
- Southampton.—Hampshire Nurses' Inst., Belle Vue. Matron, Mrs. A. Varian.
- Southport.—Birkdale Trained Nurses' Home, 53, Liverpool Road, also Home for Patents, Supt., Miss M. A. Toule.
- Infirmiry Nursing Inst. Lady Supt., Miss Alice Clark.
- Staleybridge (Cheshire).—District Nursing Assoc. Pres. Miss J. F. Knott.

Stoke - on - Trent. — Staffordshire Inst. for Nurses. Lady Supt., Miss Shirley.

Stratford - on - Avon. — Nursing Home and Children's Hospital. Supt., Miss Annie Moseley.

Medical, Surgical, Fever and Monthly Nurses, £1 rs. ordinary, £2 2s. infectious cases.

Sunderland. — Nursing Inst. and Home for Trained Nurses. Supt., Mrs. Hugh Marriner.

Swansea. — General and Eye Hosp. Nursing Staff. Matron, Edith Sykes.

Taunton. — Victoria Jubilee Nursing Inst. Lady Supt., Miss Harris.

Wakefield. — Trained Nurses' Home, 2 Wentworth Ter. Lady Supt., Miss Elizabeth Reed.

Patients received in the Home under their own medical adviser. Fees according to case. Special attention given to patients undergoing Weir-Mitchell treatment.

Weston - super - Mare. — Nurses' Inst., 4 St. Margaret's Ter. Lady Supt., Mrs. Finlay.

Winchester. — Royal Hants County Hosp. Matron, Miss Mary Mocatta.

Witham (Essex). — St. Alban's Diocesan Nursing Inst. Manageress, Miss M. A. Luard.

Wolverhampton. — Queen Victoria Nursing Inst. Lady Supt., Miss Loveys.

Wotton-under-Edge. — Convalescent and Nursing Home. Matron, Miss Byrde.

Worcester. — City and County Nursing Inst., Tything. Lady Supt., Miss M. E. Winterton.

Worthing. — Medical and Surgical Home, 7, Marine Par. Principals. Timewell and Maginn.

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 Æsculapian Society—115, Green Lanes, N.
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 Anthropological Institute of Great Britain & Ireland—3, Hanover Square, W.
 Association for the Advancement of Medicine by Research—Secretary, 70, Harley Street, W.
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 British Dental Association—Secretary, 40, Leicester Square, W.C.
 British Gynæcological Society—20, Hanover Square, W.
 British Homœopathic Society—Homœopathic Hospital, Bloomsbury, W.C.
 British Institute of Public Health, 20, Hanover Square, W.
 British Laryngological, Rhinological, and Otological Association—Sec., 25, Old Burlington, Street, W.
 British Medical Association—429, Strand, W.C.
 British Medical Benevolent Fund—Sec., Southwell Gardens, Queen's Gate, S.W.
 British Medical Temperance Association—Sec., Carlton House, Enfield.
 British Orthopædic Society—Hon. Secs., 25, Weymouth Street, and 9, Newhall Street, Birmingham.
 Chemical Society—Burlington House, Piccadilly, W.
 Clinical Society of London—20, Hanover Square, W.
 Dermatological Society of Great Britain and Ireland—20, Hanover Square.
 Dermatological Society of London—Secretary, 23, Lower Seymour St., W.
 Entomological Society—11, Chandos Street, Cavendish Square, W.
 Epidemiological Society—11, Chandos Street, Cavendish Square, W.
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Physiological Society—Sec., C. S. Sherrington, M.D., Univ. Coll., Liverpool.
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 Society for the Study of Inebriety—Sec., 2, Alexander Road, St. John's Wood,
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Braithwaite's Retrospect—Half
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Journal of—Monthly, 2/6—
Bale & Sons, Gt. Titchfield St.
British Medical Journal—Weekly
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Bulletin of Pharmacy—Monthly,
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Chemical Industry—Journal of So-
ciety of—Monthly—East Hard-
ing Street, E.C.

- Chemical News—Weekly 4d—6, Creed Lane
- Chemical Society, Journal of the—Monthly, 30/- per annum—Gurney & Jackson, 1, Paternoster Row, E.C.
- Chemist and Druggist, the—Weekly 4d, 10/- per annum—42, Cannon Street
- Chemists and Druggists, Register of—Annual 5/-—17, Bloomsbury Square
- Clinical Journal—Weekly 3d—Bartholomew Close
- Dental Association, Journal of British—Monthly 6d—Baillière and Co., King William Street
- Dental Record—Monthly 6d—3, Lexington St., Golden Square
- Dental Science—British Journal of—1st and 15th 6d—J. P. Segg & Co. 291, Regent Street, W.
- Dentist, the—Monthly, 7/- per annum—13, Cursitor Street, E.C.
- Dentist's Register—Annually 3/9—General Medical Council, 299, Oxford Street, W.
- Dermatology—British Journal of—1/- Monthly—H. K. Lewis, 136, Gower Street, W.C.
- Dublin Journal of Medical Science—Monthly 2/-—Fannin & Co.
- Edinburgh Hospital Reports—Yearly 12/6—Young J. Pentland, Teviot Place
- Edinburgh Medical Jour.—Monthly 2/-—Young J. Pentland, Edinburgh
- Entomologist, Monthly Magazine—Monthly 6d—1, Paternoster Row, E.C.
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- Geological Magazine—Monthly 1/6—37, Soho Square, W.
- Geological Society, Journal of—Irregular 5/-
- Geologist's Association's Proceedings—Quarterly 1/6—E. Stanford, 27, Cockspur Street
- Glasgow Medical Journal—Monthly 2/-—A. Macdougall, 7, Mitchell Lane, Glasgow
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- Ibis, the—Quarterly 6/-—Gurney & Jackson, 1, Paternoster Row
- Index Medicus—Monthly—50/- Annually—Kegan Paul & Co. Charing Cross Road, W.C.
- Irish Medical Directory—Annually 6/-—Baillière & Co. 20, King William Street, W.C.
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- Lancet—Weekly 7d—423, Strand, W.C.
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- Linnæan Society, Proceedings of—Annually 3/-—Longmans & Co.
- Linnæan Society, Transactions—Irregular. Price varies—Society's Apartments, Burlington House
- Liverpool Medical Chirurgical Journal 3/6—Half-yearly—H. K. Lewis, Gower Street, W.C.
- Medical Age—Semi-monthly, 6/- per annum—W. M. Warren, 21, North Audley Street, W.
- Medical Annual—Annually 7/6—J. Wright & Co. Bristol
- Medical Chronicle—Monthly 1/6—John Heywood, Manchester
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- Medical Magazine—Monthly 2/6—Southwood, Smith & Co. 62, King William Street, E.C.

- Medical Pioneer—Monthly—33, Paternoster Row, E.C.
- Medical Press & Circular—Weekly 5d—A. A. Tindall, 20, King William Street
- Medical Record (New York)—Weekly, 30/- per annum—Kegan Paul & Co. Charing Cross Road, W.C.
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- Medical Student's Register—Annually 2/6—54, Gracechurch St.
- Medical Temperance Review—Monthly 6d—33 Paternoster Row
- Medical Times & Hospital Gazette—Weekly 2d—11, Adam St., W.C.
- Medicine—Monthly, 8/- per annum—W. M. Warren, 21, North Audley Street, W.
- Mental Science, Journal of—Quarterly 5/-—J. and A. Churchill, 7, Great Marlborough Street
- Meteorological Record—Quarterly—E. Stanford, 27, Cockspur St.
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- Microscopical Science, Quarterly Journal of—10/-—J. and A. Churchill, 7, Gt. Marlborough St.
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- Mind—Quarterly 3/-—Williams & Norgate, Henrietta Street, W.C.
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- Nature—Weekly 6d—Macmillan & Co. Lim., Bedford Street
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- New Sydenham Society—Irrregular—Subscription 21/-—H. K. Lewis, 136, Gower Street
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- New York Medical Journal—Weekly 33, Bedford Street, W.C.
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- Nursing Record—Weekly 4d—11, Adam Street
- Odontological Society, Transactions of—Monthly during Sessions 2/6—87, Great Titchfield Street
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- Ophthalmic Review—Monthly 1/-—J. & A. Churchill, 7, Great Marlborough Street
- Ophthalmological Society's Transactions—Yearly 12/6—J. and A. Churchill, 7, Great Marlborough Street
- Pathology & Bacteriology, Journal of—Quarterly—Y. J. Pentland, West Smithfield, E.C.
- Pediatrics—Fortnightly 8/- per annum—Great Titchfield Street
- Pharmaceutical Journal—Weekly 4d—17, Bloomsbury Sq., W.C.
- Pharmaceutical Society, Calendar of—Annually 1/-—17, Bloomsbury Square
- Pharmacy, Monthly Magazine of—Monthly 6d—Burgoyne, Burbidges & Co. 16, Coleman St.
- Physiology, Journal of—21/- per volume—Ave Maria Lane
- Practitioner—Monthly 1/-—Cassell & Co. Ludgate Hill, E.C.
- Psychical Society, Proceedings of the—Occasionally—Kegan Paul and Co. Charing Cross Road, W.C.
- Public Health—Monthly 1/-—E. W. Allen, Ave Maria Lane, E.C.
- Quarterly Medical Journal, 2/-—Pawson & Brailsford, Sheffield
- Quarterly Therapeutic Review—1/-—Baiss Bros. & Co. 4, Jewry Street
- Quekett Microscopic Club, Journal of—Half-yearly 2/6—Williams and Norgate, 14, Henrietta St.
- Registrar General's Return of Births, Deaths & Marriages—Weekly, Quarterly & Annually—Eyre & Spottiswoode, 9, East Harding Street, E.C.

- Royal College of Surgeons' Calendar
—Annually 1/- — Taylor and Francis, Red Lion Court, Fleet Street, E.C.
- Royal Microscopical Society, Journal of—Bi-Monthly, 30/- per annum—Williams & Norgate, Henrietta Street, Covent Garden
- Sanitary Journal—Monthly 1/-—26, Bothwell Street, Glasgow
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- Science Progress—Quarterly, 10/6 per annum—28 & 29, Southampton Street, W.C.
- Scientific American — Weekly, per annum 18/-—Kegan Paul & Co. Charing Cross Road, W.C.
- Scientific American Supplement—25/- per annum—Kegan Paul & Co., Charing Cross Road, W.C.
- Scottish Medical & Surgical Journ. —Monthly 2/-—W. F. Clay, Teviot Place, Edinburgh
- State Medicine, Journal of—Monthly 2/-—Baillière & Co., King William Street, W.C.
- St. Bartholomew's Hospital Reports —Yearly—15, Waterloo Place
- St. Mary's Hospital Gazette — Monthly—Morton & Bart, 187, Edgware Road, W.
- St. Thomas's Hospital Reports—Yearly—J. & A. Churchill, 7 Great Marlborough Street
- Therapeutic Gazette—Monthly, 10/- per annum—W. M. Warren, 21, North Audley Street, W.
- Therapist, the—Monthly 6d—St. Dunstan's Chambers, Fetter Lane, E.C.
- Treatment — Fortnightly 6d — 11, Adam Street, W.C.
- Veterinary Journal—Monthly 1/6—Baillière & Co. King William St.
- West London Medical Journal—Quarterly—J. Bale & Sons, Great Titchfield Street, W.
- Westminster Hospital Reports—Yearly—7, Great Marlborough Street
- Year Book of Pharmacy—Annually 10/-—J. & A. Churchill, 7, Great Marlborough Street
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- Zoological Record—Annually 30/-—Gurney & Jackson, Paternoster Row
- Zoological Society of London, Proceedings—Quarterly 3/- plain; 12/- coloured—Longmans & Co. Paternoster Row
- Zoologist—Monthly 1/- — Simpkin and Co. Paternoster Row

The Medical Annual Note Book.

It is easier to make a note of a thing, than to remember *where* the note was made. The following pages are indexed under their respective headings, and any note can be immediately found when required.

NOTES.

Copy here any formula or fact you wish to keep for reference. (These pages are indexed under the word "Notes.")

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WILLIAM COLES & Co., 225, Piccadilly, LONDON, W.



NOTES.

J. WRIGHT & CO., BRISTOL, Medical Publishers,
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Are prepared to negotiate for the **Printing and Publication of Medical and Scientific Works** of every description, and their facilities for this class of work are of a very high description.

ADDRESSES (PRIVATE).

MÖLLER'S New Hydroxyl-free Cod-Liver Oil

is absolutely pure, and causes NO "REPEATING" OR ERUCTATIONS, as, by our new patented process, all decomposition of the fats is prevented. Specimens for clinical testing sent free on application.

TO BE OBTAINED FROM ALL CHEMISTS.

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RICH IN FLESH AND BONE FORMERS.

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FOR INFANTS AND INVALIDS.

BOOKS OR INSTRUMENTS LENT.

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and Printers,

Are prepared to negotiate for the **Printing** and **Publication** of **Medical** and **Scientific Works** of every description, and their facilities for this class of work are of a very high description.

INSTRUMENTS, APPLIANCES, OR MATERIALS WANTED.

COLES' SPIRAL SPRING TRUSS :

INVENTORS AND PATENTEES,

WILLIAM COLES & Co., 225, Piccadilly, LONDON, W.



INSTRUMENTS, APPLIANCES, OR MATERIALS WANTED.

COLES' SPIRAL SPRING TRUSS:

INVENTORS AND PATENTEES,

WILLIAM COLES & Co., 225, Piccadilly, LONDON, W.



DRUGS WANTED.

MÖLLER'S New Hydroxyl-free Cod-Liver Oil

is absolutely pure, and causes NO "REPEATING" OR ERUCTATIONS, as, by our new patented process, decomposition of the fats is prevented. Specimens for clinical testing sent free on application.

TO BE OBTAINED FROM ALL CHEMISTS.

DRUGS WANTED.

A PERFECT ANTIDOTE FOR ANÆMIA.

SCOTT'S MIDLOTHIAN **OATFLOUR.**

ENTIRELY FREE FROM HUSK.

DRUGS WANTED.

J. WRIGHT & CO., BRISTOL, Medical Publishers,
and Printers,

Are prepared to negotiate for the **Printing** and **Publication** of **Medical** and **Scientific Works** of every description, and their facilities for his class of work are of a very high description.

Cadbury's cocoa

ABSOLUTELY PURE, THEREFORE BEST.

The "LANCET" says :—"CADBURY'S Cocoa represents the standard of highest purity."

IN DRINKING COCOA, care should be taken to have the pure article only, as many so-called "pure" Cocos contain added matter which is not only unnecessary but positively harmful.

CADBURY'S is a perfectly safe and reliable Cocoa, containing all the full nourishing properties of the Cocoa bean, without any foreign mixture whatsoever. As a sustaining, strength-giving beverage, and a nourishing food, CADBURY'S Cocoa fulfils every requirement.

The "MEDICAL MAGAZINE" says :—"For Strength, for Purity, and for Nourishment, there is nothing superior to be found."

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74th YEAR.

YORKSHIRE INSURANCE CO.

(ESTABLISHED AT YORK, 1824.)

FIRE. — LIFE. — ANNUITIES.

Capital (Authorised) £1,000,000 | Accumulated Fund - £1,078,456
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Trustees—The Right Hon. Lord DERWENT. The Right Hon. Lord WENLOCK.

Head Office - - YORK.
London Office : 82, OLD BROAD STREET, E.C.

SPECIMEN RATES.—Annual Premium to insure the Sum of £100.

Age next Birth-day	Premium Payable for the whole of Life.		Limited Payments.				Age next Birth-day.
			Table V. With Profits.		Table VI. Without Profits.		
	Table I. With Profits.	Table II. Without Profits.	20 Pay- ments only.	25 Pay- ments only.	20 Pay- ments only.	25 Pay- ments only.	
25	£2 3 10	£1 16 1	£3 3 3	£2 15 11	£2 12 1	£2 6 0	25
30	2 9 1	2 0 9	3 8 8	3 0 10	2 16 10	2 10 5	30

Endowment Insurances payable at a specified age or at previous death.

Age next Birth-day.	Table III. With Profits.		Table IV. Without Profits.		* New Table with Deferred Profits.		Age next Birth-day.
	Payable at 55.	Payable at 60.	Payable at 55.	Payable at 60.	Payable at 55.	Payable at 60.	
25	£3 5 6	£2 16 8	£2 15 0	£2 7 5	£2 18 11	£2 10 8	25
30	4 0 2	3 7 3	3 8 0	2 16 8	3 12 9	3 0 6	30

* In case of death before the Endowment Age, the sum insured only will be payable.

SPECIAL Attention is called to the Liberal Options which are now obtainable under any of the **Endowment Tables** of the Company, on the attainment of the Endowment Age. These are :—

- 1.—Payment of the full Sum Insured in Cash, with Bonuses.
- 2.—The Insurance to be continued without further payment of premium for the original amount of the Policy. The Bonuses, and the balance of the sum insured after providing for this Paid-up Policy, will be paid in cash.
- 3.—A Paid-up Policy FOR AN INCREASED AMOUNT, payable at death.
In cases 2 and 3 proof of good health will be required.
- 4.—A **Pension** to be drawn for the remainder of life, and in addition, a Paid-up Policy, without further payment of premium, for the original sum insured.
- 5.—A **Pension** for the remainder of life.
- 6.—A **Pension** to wife or child.
- 7.—A **Deferred Pension** to commence at the death of the life insured, and be payable during the life of the widow, or of a child.

FIRE INSURANCES effected by the Company on the most moderate terms, according to the nature of the risks.

APPLICATIONS FOR AGENCIES INVITED.

INDEX TO LIFE ASSURANCE OFFICES.

A, when Established; B, C, D, Annual Premiums to Insure £100 on death with Profits, at the age of 30, 40, and 50; E, Assurance and Annuity Funds, exclusive of Paid-up Capital. M, Mutual Offices; P, Proprietary Offices.

Those marked with an asterisk (*) in the E column have not sent revised figures for 1896.

TITLE, &C., OF OFFICE.	A	B	C	D	E
Abstainers and General, Life and Accident, Carrs Lane, Birmingham. <i>Sec.</i> , R. A. Craig, A.I.A. P	1883	40/11	55/10	82/3	£ 100,000
Alliance, Fire and Life, Bartholomew Lane, E.C. <i>Sec.</i> , Robert Lewis P	1844	48/9	64/5	90/9	2,730,062
Atlas, Fire & Life, 92, Cheapside, E.C. <i>Act.</i> , Robert Cross. <i>Sub. Man.</i> , A.W. Yeo. <i>Gen. Man.</i> , Saml. J. Pipkin. <i>Further particulars see page 718</i> P	1808	49/3	63/7	88/8	1,492,474
British Empire, Mutual Life, 4 & 5, King William Street, E.C. <i>Gen. Man.</i> , G. H. Ryan M	1847	47/2	63/9	92/3	2,600,000
British Equitable, Life, Queen Street Place, E.C. <i>Man.</i> , J. W. Fairey <i>Further particulars see page 722</i> P	1854	49/-	66/-	94/5	1,479,797
British Workman's and General, Life and Endowments, Broad Street Corner, Birmingham. <i>Chairman</i> , F. T. Jefferson. <i>Sec.</i> , S. J. Port P	1866	48/2	65/3	91/3	239,563
Caledonian, Fire and Life, 19, George Street, Edinburgh. <i>Man.</i> , D. Deuchar. London Office, 82, King William Street, E.C. P	1805	48/9	64/6	88/6	1,459,834
City of Glasgow, Life, 30, Renfield Street, Glasgow. <i>Man.</i> , F. F. Elderton. London Office, 12, King William Street, E.C. <i>Sec.</i> , Arthur J. Hemming, F.I.A. P	1838	48/5	64/6	89/10	2,224,831
Clergy Mutual, Life, 2 & 3, Sanctuary, Westminster. <i>Act.</i> , F. B. Wyatt. <i>Sec.</i> , G. H. Hodgson M	1829	46/4	62/2	87/4	3,982,607
Clerical, Medical and General, Life, 15, St. James' Square, and Mansion House Buildings. <i>Act.</i> , W. J. H. Whittall P	1824	48/7	66/9	96/3	3,397,169
Colonial Mutual, Life and Annuity, 33, Poultry. <i>Man.</i> , Edward W. Browne M	1873	44/8	60/9	86/2	2,040,972
Commercial Union, Fire, Life and Marine, 24, 25, and 26, Cornhill, E.C. <i>Act.</i> , T. E. Young, B.A. P	1861	49/5	64/2	87/8	1,909,707
Co-operative, Fire, Life and Fidelity, Long Millgate, Manchester. <i>Man.</i> , James Odgers P	1867	45/8	61/5	88/4	15,234
Eagle, Life, 79, Pall Mall, S.W. <i>Gen. Man.</i> and <i>Sec.</i> , Geo. R. Jellicoe P	1807	50/8	65/5	91/4	2,383,544
Economic, Life, 6, New Bridge Street, Blackfriars. <i>Act.</i> and <i>Sec.</i> , G. Todd, M.A., F.I.A. M	1823	44/3	59/9	87/6	3,620,258
Edinburgh, Life and Annuities, 22, George Street, Edinburgh. <i>Man.</i> , G. M. Low, F.F.A. <i>Sec.</i> , A. Hewat, F.F.A., F.I.A. London Office, 11, King William Street, E.C. <i>Sec.</i> , Frank Griffith P	1823	47/7	63/2	89/-	3,013,788
English and Scottish Law, Life, Annuity, Endowment, and Loan, 12, Waterloo Place, S.W. <i>Gen. Man.</i> , Arthur Jackson P	1839	49/6	65/2	90/11	2,167,308
Equitable Life Assurance Society, Mansion House Street, E.C. <i>Act.</i> , H. W. Manly <i>Further particulars see page 720</i> M	1762	53/5	67/11	90/8	4,321,532
Equity and Law, Life, 18, Lincoln's Inn Fields, W.C. <i>Act.</i> , A. F. Burrill, F.I.A. P	1844	48/10	64/6	90/9	2,953,395
Friends' Provident, Life, Annuities, &c., Bradford, Yorkshire. <i>Act.</i> and <i>Sec.</i> , John Bell Tennant, M	1832	45/9	58/1	79/3	2,650,000
General Life, 103, Cannon Street, E.C. <i>Man.</i> and <i>Sec.</i> , John Robert Freeman. <i>Further particulars see page 723</i> P	1837	49/10	65/4	92/8	1,502,436

A, when Established; B, C, D, Annual Premiums to Insure £100 on death, with Profits, at the age of 30, 40 and 50; E, Assurance and Annuity Funds, exclusive of Paid-up Capital. M, Mutual Offices; P, Proprietary Offices.

TITLE, &C., OF OFFICE.	A	B	C	D	E
Gresham, Life, St. Mildred's House, E.C. <i>Man.</i> and <i>Sec.</i> , James H. Scott .. P	1848	49/-	65/8	94/3	£ 6,162,225
Guardian, Fire and Life, 11, Lombard St., E.C., and 21, Fleet Street. <i>Sec.</i> , T. G. C. Browne.. P	1821	48/10	64/6	89/3	2,818,000
Hand-in-Hand, Fire, Life and Annuities, 26, New Bridge Street, Blackfriars, E.C. <i>Man.</i> , B. Blenkinsop .. M	1696	53/7	69/10	96/2	2,806,213
Imperial, Life, 1, Old Broad Street, and 22, Pall Mall. <i>Act.</i> and <i>Gen. Man.</i> , J. Chisholm, F.I.A. <i>Sub. Man.</i> and <i>Joint Act.</i> , Fredk. Bell, F.I.A. ... P	1820	46/11	62/1	87/5	2,186,560
Lancashire, Life and Fire, Exchange Street, Manchester. <i>Gen. Man.</i> Digby Johnson, London Office, 14, King William St., E.C. <i>Sec.</i> , John P. Read P	1852	48/6	63/6	90/6	1,009,974
Law Life, 187, Fleet Street. <i>Man.</i> , F. H. Holt, <i>Act.</i> , A. B. Adlard .. P	1823	49/4	64/10	91/-	3,785,589
Law Union and Crown, Life, Fire and Annuities, 126 Chancery Lane. <i>Gen. Man.</i> , A. Mackay .. P	1825	48/4	64/-	89/10	3,423,560
Legal and General Life, 10, Fleet Street, E.C. <i>Act.</i> and <i>Man.</i> , E. Colquhoun, F.I.A. ... P	1836	50/9	65/11	90/9	3,000,000
Life Association of Scotland, 82, Prince's Street, Edinburgh. <i>Man.</i> , John Turnbull Smith. <i>Sec.</i> , J. Sharp. London Office, 5, Lombard Street. <i>Sec.</i> , J. C. Wardrop .. P	1838	50/-	65/4	93/4	4,508,832
Liverpool and London and Globe, Fire, Life and Annuities, 1 Dale Street, Liverpool. <i>Sec.</i> , John M. Dove. London Office, 7, Cornhill, E.C. <i>Sec.</i> , A. Hendriks, F.I.A. ... P	1836	49/3	65/6	91/3	5,007,302
London and Lancashire, Life, 66 & 67, Cornhill, E.C. <i>Man.</i> & <i>Act.</i> , W. P. Clirehugh. <i>Asst. Sec.</i> , G. W. Manning .. P	1862	45/10	62/4	86/10	1,126,862
London Assurance Corporation, Fire, Life and Marine, 7, Royal Exchange. <i>Man.</i> of Life Dept., James Clunes. <i>Act.</i> , Geo. King .. P	1720	49/6	64/11	91/5	2,060,497
London, Edinburgh and Glasgow, Life, Industrial, and Accidents, Farringdon Street, E.C. <i>Sec.</i> , T. V. Cowling. <i>Gen. Man.</i> , Thos. Neill P	1881	48/11	64/7	92/-	114,172
London Life Association, Lim., 81, King William St., E.C. <i>Act.</i> and <i>Sec.</i> , C. D. Higham, F.I.A. M	1806	60/4	78/10	108/4	4,381,663
Marine and General Mutual, Life and Marine, 14, Leadenhall St., E.C. <i>Act.</i> and <i>Sec.</i> , S. Day, F.I.A. ... M	1852	48/10	65/11	91/11	825,069
Metropolitan Life, 13, Moorgate St., E.C. <i>Act.</i> and <i>Sec.</i> , L. M. Simon. <i>Further particulars see page 723</i> .. M	1835	49/9	66/4	92/-	2,027,077
National Assurance of Ireland, Fire, Life, and Annuities, 3, College Green, Dublin. London Office, 33, Nicholas Lane, E.C. P	1822	48/7	64/3	91/7	359,916
National Guardian, Life, 21, New Oxford Street, W.C. <i>Chairman</i> , J. C. Stredder .. P	1865	48/6	64/8	86/8	16,363
National Mutual Life, 39, King Street, Cheapside, <i>Act.</i> and <i>Man.</i> , Geoffrey Marks, F.I.A. <i>Joint Secs.</i> , H. G. Rowsell and H. J. Lockwood. <i>Asst. Act.</i> , R. Todhunter. M.A., F.I.A. ... M	1830	48/4	63/7	89/6	2,483,216
National Provident, 48, Gracechurch Street, E.C. <i>Act.</i> and <i>Sec.</i> , Arthur Smither .. M	1835	50/2	66/3	91/1	5,057,089
New York Life, Trafalgar Buildings, Trafalgar Square, London, W.C. <i>Gen. Man.</i> , Alex. J. Hawes. <i>Sec.</i> , Wm. R. Collinson .. P	1845	46/7	64/5	97/-	38,513,663
North British & Mercantile, Fire, Life & Annuities, 61, Threadneedle Street. E.C., and 64, Princes Street, Edinburgh. <i>Life Man.</i> and <i>Act.</i> , London, H. Cockburn, <i>Sec.</i> , F. W. Lance. <i>Further particulars see page 719</i> .. P	1809	49/10	66/1	91/11	9,606,182

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TITLE, &c., OF OFFICE.	A	B	C	D	E
Northern Assurance, 1, Moorgate St., E.C. <i>Gen. Man.</i> , H. E. Wilson .. P	1836	49/-	£4/8	90/10	£ 3,162,288
Norwich Union, Life, Norwich. <i>Sec.</i> , J. J. W. Deuchar. London Office, 50, Fleet Street, E.C.	1808	45/8	59/6	85/3	3,310,084
Patriotic Life and Fire, 9, College Green, Dublin. <i>Man.</i> , B. H. O'Reilly. <i>Act.</i> , Samuel Hunter.					
London Office, 69, King William St., E.C. <i>Man.</i> Chas. E. Strong .. P	1824	48/8	64/5	90/4	156,058
Pearl, Life, London Bridge, City, E.C. <i>Man.</i> , P. J. Foley .. P	1864	49/-	65/-	92 -	593,612
Pelican, Life, 70, Lombard Street, 57, Charing Cross, <i>Gen. Man.</i> , James Sorley, F.I.A., F.R.S.E. P	1797	48/11	64/9	91/7	1,300,540
Provident, Life, 50, Regent Street. <i>Sec.</i> , C. Stevens P	1806	50/2	66/4	92/10	3,054,191
Provident Clerks, Life and Benevolent Fund, 27 and 29, Moorgate Street, E.C. <i>Sec.</i> , John E. Gwyer.. M	1840	46/4	62/8	92/2	1,950,000
Prudential (Ordinary), Life, Holborn Bars. <i>Sec.</i> , W. J. Lancaster. <i>Further particulars see page 722</i> .. P	1848	49/6	65/11	91/11	13,068,344
Refuge, Life, Oxford Street, Manchester. <i>Man.</i> , W. Proctor. London Office, 29, New Bridge Street .. P	1864	49/3	65/9	91/9	888,725
Rock, Life and Survivorship Annuity and Capital Redemption, 15, New Bridge Street, E.C. <i>Act.</i> , G. S. Crisford, F.I.A. <i>Further particulars see page 721</i> .. P	1806	42/5	55/11	81/2	2,036,978
Royal, Fire, Life and Annuities, Royal Insurance Buildings, Liverpool. <i>Man.</i> , Chas. Alcock. London Offices, Lombard St. <i>Sec.</i> , Jno. H. Croft P	1845	49/9	64/1	88/3	5,329,898
Royal Exchange Assurance, Fire, Life, Annuities, &c., Royal Exchange, and 29, Pall Mall. <i>Act.</i> , H. E. Nightingale, F.I.A. .. P	1720	48/11	65/-	92/7	2,329,895
Sceptre, Life and Endowments, 40, Finsbury Pavement, E.C. <i>Sec.</i> , J. G. Phillips.. P	1864	48/8	64/8	90/6	659,586
Scottish Amicable, Life, St. Vincent Place, Glasgow. <i>Man.</i> , N. B. Gunn. <i>Sec.</i> , W. G. Spens M	1826	51/9	66/3	90/1	3,672,937
Scottish Equitable, Life, 26, St. Andrew Square, Edinburgh. <i>Man.</i> , T. B. Sprague, M.A., LL.D. <i>Sec.</i> , J. J. McLauchlan. London Office, 19, King William Street, E.C. <i>Sec.</i> , F. R. Leftwich M	1831	50/3	65/5	90/9	3,812,526
Scottish Imperial, Life, 183, West George Street, Glasgow. <i>Man.</i> , T. Wilkinson Watson. London Office, 15, King William Street, E.C. .. P	1865	46/7	63/5	91/7	449,435
Scottish, Life, Accident and Annuities, 19, St. Andrew's Square, Edinburgh. <i>Man.</i> , David Paulin, F.R.S.E. London Office, 13, Clements Lane, King William Street, E.C. <i>Sec.</i> , George Struthers P	1881	49/5	64/6	90/5	339,884
Scottish Metropolitan, Life, 25, St. Andrew Square, Edinburgh. <i>Man.</i> , Wm. G. Bloxson. London Office, 8, King Street, E.C. <i>Man.</i> , H. E. Marriott .. P	1876	40/8	54/7	79/7	190,029
Scottish Provident, Life and Annuities, 6, St. Andrew Square, Edinburgh. <i>Man.</i> , J. G. Watson. <i>Sec.</i> , J. Lamb and H. R. Cockburn. London Office, 17, King William Street, E.C. <i>Sec.</i> , J. Muir Leitch .. M	1837	41/6	54/9	81/7	9,926,145
Scottish Temperance, Life and Accident, 81, Renfield Street, Glasgow. <i>Man.</i> , Adam K. Rodger. London Office, 96, Queen Street, Cheapside. <i>Man.</i> , W. A. Bowie .. P	1883	48/6	63/9	89/10	315,850
Scottish Union and National, Fire, Life, and Annuities, 35, St. Andrew Square, Edinburgh. <i>Sec.</i> , J. K. Macdonald. London Office, 3, King William Street, E.C. <i>Sec.</i> , William Porteous.. P	1824	50/-	65/-	90/-	4,372,767

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TITLE, &C, OF OFFICE.	A	B	C	D	E
Scottish Widows' Fund, Life and Survivorship, 9, St. Andrew Square, Edinburgh. <i>Man. & Act.</i> , A. H. Turnbull. <i>Sec.</i> , J. P. Anderson. London Office, 28, Cornhill, E.C. <i>Sec.</i> , J. W. Miller M	1815	51/9	66/3	90 7	£ 13,500,745
Standard Life, 3, George Street, Edinburgh. <i>Man. and Act.</i> , S. C. Thomson. London Offices, 83, King William Street, and 3 Pall Mall East. <i>Sec.</i> , J. H. W. Rolland P	1825	48/11	64/5	89/-	8,174,591
Star, Life, Annuities, Endowments, 32, Moorgate Street, City. <i>Act. and Sec.</i> , H. G. Hobson P	1843	48/9	64/11	90/6	4,074,738
Sun, Life, 63, Threadneedle Street, E.C. <i>Act.</i> , R. Sewell. <i>Sec. & Gen. Man.</i> , E. Linnell. <i>Further particulars see page 717</i> P	1810	49/2	66/6	94/2	3,350,000
Union, Fire and Life, Cornhill, and Baker Street. <i>Sec.</i> , C. Darrell P	1714	48/9	64/6	90/10	1,979,852
United Kent, Life and Annuities, High Street, Maidstone. <i>Gen. Man.</i> , Walter L. Seyfang. London Office, 124, Cannon St., E.C. <i>Man.</i> , A. Wallis P	1824	49/8	64/3	90/5	543,680
United Kingdom Temp., &c., Life, 1, Adelaide Place, London Bridge. <i>Sec.</i> , Johnson Brooks M	1840	48/10	64/11	50/6	6,382,000
Universal, Life, 1, King William Street, E.C. <i>Act. and Sec.</i> , Fred. Hendriks, F.I.A. P	1834	48/10	63/-	88/8	*1,044,611
University, Life, 25, Pall Mall, S. W. <i>Sec.</i> , H. W. Andras, F.I.A. P	1825	50/9	64/7	87/6	*1,056,617
Victoria, Life and Endowment, Memorial Hall Buildings, Farringdon Street, E.C. <i>Sec.</i> , Arthur J. Cook, A.I.A. M	1860	49/3	65/7	93/-	82,400
Wesleyan and General, Life, Annuities, Sicknes, Corporation St., Birmingham. <i>Gen. Man.</i> , R. A. Hunt, F.S.S., A.I.A. London Office, 18, New Bridge Street, E.C. M	1841	48/9	66/6	96/3	349,575
Westminster and General, Life, 28, King St., Covent Garden, W.C. <i>Act.</i> , Ernest Woods, F.I.A. P	1836	48/10	65/-	90/6	595,001
Yorkshire, Fire and Life, St. Helen's Square, York. <i>Sec.</i> , J. A. Cunninghame. London Office, 82, Old Broad Street, E.C. <i>Sec.</i> , James Hamilton. <i>Further particulars as to a new Endowment Scheme, combining a large amount of assurance with a low premium, see page 712</i> P	1824	49/1	64/9	91/7	*698,215

Medical Sickness and Accident, 33, Chancery Lane, W.C. *Sec.*, F. Addiscott, F.I.A., secure to registered members of the Med. Prof., and Licentiates of Dental Surgery in United Kingdom, a weekly allowance during incapacity from sickness or accident. Mutual, Established 1884. Assurance and Annuity Funds £105,000.

The Oldest Purely Fire Office in the World.



SUN

INSURANCE OFFICE

Moderate Premiums.

PROMPT SETTLEMENT OF CLAIMS.

Head Office:

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BRANCHES IN LONDON	{	60, CHARING CROSS, S.W.
		40, CHANCERY LANE, W.C
		332, OXFORD STREET, W.
		42, MINCING LANE, E.C.

BIRMINGHAM—10, Bennett's Hill
 BRISTOL—Corn Street
 LEEDS—Sun Buildings, 15, Park Row
 LIVERPOOL—6, Chapel Street
 MANCHESTER—71, King Street

NEWCASTLE-ON-TYNE—19, Collingwood Street
 EDINBURGH—40, Princes Street
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And Agencies in all parts of the United Kingdom and abroad.

SUN

INSURANCE OFFICE.

Sum Insured in 1896 - £388,952,800

ATLAS ASSURANCE CO.

HEAD OFFICE:—

92, CHEAPSIDE, LONDON, E.C.

Established in the Reign of George III.

Capital
£1,200,000



Annual Income
£565,190



Assets
£2,159,678



Claims Paid
over £13,000,000

BRANCHES—

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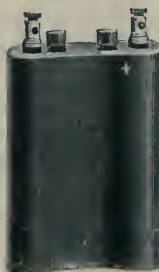
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For 3 months' Med. & Surg. Practice, £5 5s.	For 1 year's Med. & Surg. Practice, £12 12s.
Or ⁶ by three instalments at the commencement of the Sessional year—viz., First year, 12 guineas; Second year, 10 guineas; Third year, 6 guineas. Or by two instalments—viz., First year, 14 guineas; Second year, 12 guineas.	£8 8s. „ perpetual £25 25s.

In addition to the above fees, the Committee of the Royal Infirmary require the payment of 2 guineas yearly up to three years from every Student attending the Infirmary for a year or part of a year. After three years of attendance, such payment will be no longer necessary.
- (c) Single courses of Lecture, 5 guineas.

Fees for Lectures, etc., at the College must be paid to the Secretary, and Fees for Hospital Practice to the House-Physician at the time of entry.

Further particulars may be obtained from the Sec., PROF. HOWDEN, at the College,

The MIDDLESEX HOSPITAL MEDICAL SCHOOL.

Hospital Staff and Lecturers.—Consulting Physician Dr. Coupland, Sir R. Douglas Powell, Bart., Dr. Fowler, Obstetric Physician: Dr. W. Duncan. Physician to Out-Patients: Dr. C. Y. Bliss. Assistant Physicians: Dr. W. Pasteur, Dr. W. E. Wynter, Dr. A. F. Voelcker. Consulting Physician to Skin Department: Dr. Robert Living. Physician to Skin Department: Dr. Pringle. Assistant Obstetric Physician: Dr. R. Boxall. Consulting Surgeons: Mr. Nunn and Mr. Lawson. Surgeons: Mr. Henry Morris, Mr. Andrew Clark, Mr. Pearce Gould. Assistant Surgeons: Mr. J. B. Sutton, Mr. J. Murray, Mr. T. H. Killock. Ophthalmic Surgeon: Mr. Wm. Lang. Aural Surgeon: Mr. Stephen Paget. Consulting Dental Surgeon: Mr. Turner. Dental Surgeon: Mr. Storer Bennett. Assistant Dental Surgeon: Mr. Wm. Hern. Other Lecturers: Dr. Wethered, Dr. Robinson, Dr. Young, Dr. Plimpton, Dr. Mickie.

SIXTEEN RESIDENT CLINICAL APPOINTMENTS are open to Students annually.

ALL CLERKSHIPS and DRESSERSHIPS are awarded without fee.

TWO BRODERIP SCHOLARSHIPS, of the annual value of £30 and £20 respectively, each tenable for two years, are awarded every year for proficiency in Clinical Knowledge.

THE MURRAY SCHOLARSHIP, founded in connection with the University of Aberdeen, is awarded every third year to a Student of the Middlesex Hospital.

THE GOVERNORS' PRIZE OF TWENTY GUINEAS is given annually to the Student who shall have most distinguished himself in Clinical work in the Out-patient Department in his final year.

The HETLEY PRIZE, value £25, is awarded annually for proficiency in Clinical Medicine, Surgery, and Obstetrics.

The LYELL MEDAL, value £5 5s., is awarded annually.

The LEOPOLD HUDSON PRIZE, value £11 11s.

PRIZES.—A Prize in Elementary Anatomy and Biology, value £5 5s., will be given to the Student who, at the end of his first Winter Session, shall pass the best written and practical examination.

An Exhibition of the value of £10 10s. will be given at the end of his second Winter Session to the Student who shall pass the best written and practical examination in Anatomy and Physiology.

Middlesex Hospital Entrance Scholarships.—Entrance Scholarships in Classics, Mathematics and Natural Science are offered for competition at the commencement of the Winter Session. Full particulars may be obtained on application to the Dean. Successful candidates are required to become general students of the School.

SCHOLARSHIP IN ANATOMY AND PHYSIOLOGY.—An Annual Scholarship of the value of £30 a year, tenable for two years, is open to Students of the Univ. of Cambridge, and to Students of the Univ. of Oxford, who have completed their Anatomical and Physiological studies. *Subjects:* Anatomy and Physiology, including Histology. Examination to take place in October.

THE TUTOR assists all Students, especially those who are preparing for examination, without extra fee; the necessity for obtaining private instruction is thus obviated.

MEDICAL and SURGICAL REGISTRAR, RESIDENT MEDICAL OFFICER, DEMONSTRATORS of ANATOMY.—These valuable appointments are open to qualified men as they become vacant.

For further information apply to the Dean or the Resident Medical Officer, at the Hospital.

W. PASTEUR, Dean.

YORKSHIRE COLLEGE, LEEDS—Medical Department.

HOSPITAL STAFF.

Consulting Physicians—T. Clifford Allbutt, M.A., M.D., F.R.S., F.R.C.P.; J. E. Eddison, M.D.

Consulting Surgeons—C. G. Wheelhouse, F.R.C.S.; T. Pridgin Teale, M.A., M.B., F.R.S., F.R.C.S.; T. R. Jessop, F.R.C.S.; E. Atkinson, M.R.C.S., F.L.S.

Physicians—T. Churton, M.D.; A. G. Barrs, M.D., F.R.C.P.; C. M. Chadwick, M.A., M.D., F.R.C.P.

Surgeons—A. W. Mayo Robson, F.R.C.S.; E. Ward, M.A., M.B., B.C.; W. H. Brown, F.R.C.S.I., M.R.C.S.; Harry Littlewood, F.R.C.S.

Ophthalmic and Aural Surgeons—John A. Nunneley, M.B., M.R.C.S.; H. Bendelack Hewetson, M.R.C.S., F.L.S.

Obstetric Physician—James Braithwaite, M.D.

Assistant Physicians—T. W. Griffith, M.D.; E. F. Trevelyan, M.D., B.Sc., M.R.C.P.

Assistant Surgeons—R. L. Knaggs, M.A., M.C., F.R.C.S.; B. G. A. Moynihan, M.S., F.R.C.S.

Assistant Ophthalmic and Aural Surgeon—H. Secker Walker, F.R.C.S.

Dental Surgeon—T. S. Carter, L.D.S.

PROFESSORS, LECTURERS AND DEMONSTRATORS.

Medicine—Prof. J. E. Eddison, M.D., Cons. Phys. Leeds Infirmary; T. Churton, M.D., Senior Phys. Leeds Infirmary. *Surgery*—Prof. A. W. M. Robson, F.R.C.S., Senior Surg. Leeds Infirmary.

Practical Surgery—E. Ward, M.A., M.B., B.C., Surg. Leeds Infirmary. *Descriptive, Applied, and Practical Anatomy*—Prof. T. W. Griffith, M.D., C.M., Assist. Phys. Leeds Infirmary; Phys. to Leeds Public Dispensary. *Lecturer on Osteology*—Edmund Robinson, M.R.C.S., Practical Anatomy—Demonstrator: J. K. Jamieson, M.B., C.M. Hon. Demonstrators: G. L. Wells, M.B., B.S., F.R.C.S.

Surg. Leeds Public Dispensary; H. A. Smith, L.R.C.P., M.R.C.S.; B. G. A. Moynihan, M.S., F.R.C.S. *Physiology, Practical Physiology and Histology*—Prof. E. F. Trevelyan, M.D., B.Sc., Assist. Phys. Leeds Infirmary and Phys. Leeds Public Dispensary. *Surgical Pathology*—Hon. Demonstrator, H. Littlewood, F.R.C.S.

Surgeon Leeds Infirmary, Midwifery—Prof. C. J. Wright, M.R.C.S., Senior Surg. Leeds Hospital for Women and Children. *Diseases of Women and Children*—J. B. Meller, M.D., Surg. Leeds Hosp. for Women and Children. *Forensic Medicine*—T. Scattergood, M.R.C.S., Cons. Surg. Leeds Hospital for Women and Children; H. J. Campbell, M.D., Demonstrator of Pract. Toxicology—Julius B. Cohen, Ph.D., Materia Medica, Pharmacology, and Therapeutics—Prof. A. G. Barrs, M.D., F.R.C.P., Phys. Leeds Infirmary. *Pract. Pharmacy*—F. W. Branson, F.I.C. *Chemistry and Prac. Chemistry*—Prof. A. Smithells, B.Sc., Assist. Lecturer and Demonstrator: H. Ingle, F.I.C. *Biology and Comp. Anatomy*—Prof. L. C. Miall, F.R.S. *Physics*—Prof. W. Stroud, D.Sc., M.A. *Operative Surgery*—E. Ward, M.A., M.B., B.C., Surg. Leeds Infirmary. *Ophthalmology and Otolaryngology*—H. S. Walker, F.R.C.S., Assist. Ophthalmic and Aural Surg. Leeds Infirmary. *Mental Diseases*—W. Bevan Lewis, L.R.C.P., M.R.C.S., Med. Director West Riding Asylum, Wakefield. *Public Health*—Prof. R. N. Hartley, M.B., B.S.

The Lectures & Hospital Practice qualify Students for the various Examining Boards. Students can enter for the Hospital Practice, or the Lectures, or for a Single Course of Lectures separately.

The Infirmary in which the Medical and Surgical Practice is conducted has an average of 400 In-Patients. Senior Students are selected, according to merit, for several Resident Appointments.

The Dispensary, the Fever Hospital, the Hospital for Women and Children, and the West Riding Asylum at Wakefield, are also open to Students. The Prospectus and further information may be obtained from the Registrar of the College, W. F. HUSBAND, LL.B.

UNIVERSITY of EDINBURGH.

Principal—SIR WILLIAM MUIR, K.C.S.I., D.C.L., LL.D., Ph.D.

The **Winter Session** opens about the middle of October and closes about the end of March; the **Summer Session** opens at the beginning of May and closes about the end of July.

FACULTY OF MEDICINE.

Dean—Professor THOMAS R. FRASER, M.D., LL.D., F.R.S.

The Faculty embraces twelve Chairs and ten Lectureships; and attached to these Chairs there are about thirty Assistants and Demonstrators. Instruction is given in all the main branches of Medical Science, viz.:—

PROFESSORS.

CHEMISTRY—Alex. Crum Brown, M.D., D.Sc., LL.D. ZOOLOGY—J. Cossar Ewart, M.D. BOTANY—Isaac Bayley Balfour, M.D., D.Sc. ANATOMY—Sir William Turner, M.B., D.C.L., LL.D. PHYSIOLOGY—William Rutherford, M.D. MATERIA MEDICA—T. R. Fraser, M.D., LL.D. PATHOLOGY—William S. Greenfield, M.D. MEDICAL JURISPRUDENCE AND PUBLIC HEALTH—Sir Henry D. Littlejohn, M.D., LL.D. MEDICINE—Sir T. Grainger Stewart, M.D., LL.B. SURGERY—John Chlene, M.D. MIDWIFERY—Alexander Russell Simpson, M.D. CLINICAL SURGERY—Thomas Annandale, M.D. CLINICAL MEDICINE—Professors Sir T. Grainger Stewart, Fraser, Greenfield, and Simpson (on Diseases of Women).

UNIVERSITY LECTURERS.

MENTAL DISEASES—T. S. Clouston, M.D. DISEASES OF THE EYE—G. A. Berry, M.B. CLINICAL INSTRUCTION ON DISEASES OF CHILDREN—J. Carmichael, M.D., & J. Playfair, M.D. EMBRYOLOGY AND VERTEBRATE ZOOLOGY—J. Beard, D.Sc. REGIONAL ANATOMY—D. Hepburn, M.D. ADVANCED PRACTICAL PHYSIOLOGY—E. W. Carlier, M.D. EXPERIMENTAL PHARMACOLOGY—W. C. Sillar, M.B., B.Sc. PATHOLOGICAL BACTERIOLOGY—R. Muir, M.D. DISEASES OF THE LARYNX, EAR AND NOSE—P. McBride, M.D.

Practical Instruction is afforded in Laboratories furnished with the necessary appliances, and in Tutorial and Practical Classes in connection with all the above Chairs, and under the superintendence of the Professors, and opportunities are afforded to Students and Graduates to extend their practical knowledge and engage in original research.

Opportunities for Hospital Practice are afforded at the Royal Infirmary, the Hospital for Sick Children, Maternity Hospital, the City Hospital, and the Asylum for the Insane. Upwards of 1500 beds are available for Clinical Instruction of Students of the University.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh, viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch. B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch. M.); and the University may also confer Diplomas in Special Branches of Medical and Surgical Practice on Graduates in Medicine and Surgery of the University.

The minimum total amount of Class Fees for M.B. and Ch.B., including Hospital Fee (£12) is about £115, and the Matriculation and Examination Fees amount to £28 7s. An additional Fee of £10 10s. is payable by those who proceed to M.D., and £10 10s. by those who proceed to Ch.M.

The annual value of the Bursaries, Prizes, Scholarships, and Fellowships in the Faculty of Medicine amounts to about £3,400, and that of the other Bursaries, etc., open to Students of Medicine, amounts to about £1,820.

Instruction is also given in Public Health, and the Degrees of B.Sc. and D.Sc. in Public Health are conferred by the University.

Residences for Students, Graduates, and others are situated, within easy reach of the University. Board and lodging on moderate terms.

Further information as to Matriculation, the Curricula of Study for Degrees, etc., may be obtained from the Clerk of Senatus, or the Dean of the Faculty of Medicine; and full details are given in the University Calendar, published by James Thin, 55, South Bridge, Edinburgh.

By Authority of the Senatus,

November, 1897.

L. J. GRANT, *Secretary of Senatus.*

Royal College of Surgeons of Edinburgh.

FOUNDED 1505.

Copies of the Regulations for the Fellowship, Licence, and Licence in Dental Surgery, with dates of Examinations, Curricula, etc., for the year 1897-8, are now ready, and may be had on application to

JAMES ROBERTSON, Solicitor, 48, GEORGE SQUARE, EDINBURGH,
Clerk to the College.

St. Mark's Hospital

FOR

FISTULA AND OTHER DISEASES OF THE RECTUM.

CITY ROAD, LONDON, E.C.

FOUNDED 1835.

Physician:

F. DE HAVILLAND HALL, Esq., F.R.C.P., M.D., 47, Wimpole Street, W.

Surgeons:

ALFRED COOPER, Esq., F.R.C.S., 9, Henrietta Street, Cavendish Square, W. | DAVID HENRY GOODSALL, Esq., F.R.C.S., 17, Devonshire Place, Upper Wimpole St., W.

Assistant Surgeons:

F. SWINFORD EDWARDS, Esq., F.R.C.S., 55, Harley Street, Cavendish Square, W. | FREDERICK CHAS. WALLIS, Esq., F.R.C.S., 26, Welbeck Street, Cavendish Square, W.

The days for attendance of Out-patients are, Women—Wednesdays, at 9.30 o'clock in the morning. Men—Saturdays, at 2 o'clock in the afternoon. *Punctually.*

Operations take place on Mondays, 9 a.m.; Tuesdays, 2.30 p.m.

The practice of this Hospital is free to Medical Men and Students.

Clinical Instruction is given by the Surgeons both in the Out-patient Department and in the Wards.

FOR FURTHER PARTICULARS APPLY TO EDGAR PENMAN, *Secretary.*

Hospital for Consumption

BROMPTON.

The Hospital contains 321 Beds, and in 1897 received 1,681 In-patients; 13,098 Out-patients were also treated. The yearly requirements of the Hospital cannot be estimated at less than £25,000. Further, it has been decided upon the unanimous and urgent advice of the Medical Staff to establish a

“Country Branch and Convalescent Home,”

and it is estimated that £20,000 will be needed to inaugurate this new departure.

The Charity, being UNENDOWED, is dependent on Donations, Annual Subscriptions, and Legacies, CONTRIBUTIONS are therefore earnestly solicited in aid of both objects.

Treasurer—W. S. DEACON, Esq.

Secretary—W. H. THEOBALD.

Bankers—Messrs. WILLIAMS, DEACON & Co.

ST. PETER'S HOSPITAL

For Stone, Stricture, & Urinary Diseases, &c.

ESTABLISHED 1860.

HENRIETTA ST., COVENT GARDEN, W.C.

President—Rt. Hon. THE EARL OF DUNRAVEN AND MOUNT EARL, K.P.

Treasurer—F. A. BEVAN, Esq.

ST. PETER'S HOSPITAL is intended for Persons of both Sexes suffering from Stone in the Bladder and other Diseases of the Genito-Urinary Organs, and contains 2 Wards for Men, 24 Beds; 1 Ward for Women, 2 Beds; and a Private Ward for Paying Patients.

The number of Patients treated during the last twelve months was 430 In-Patients, and 4,858 New Out-Patients, the latter being seen on Monday at 2 and 5; Tuesday at 2; Wednesday at 5; Thursday at 2; Friday at 2, Women and Children only; Saturday at 4.

A Donation of Ten Guineas constitutes a Life Governor; a Subscription of One Guinea an Annual Governor. Subscriptions and Donations will be thankfully received by Messrs. BARCLAY & Co., 54, Lombard Street, E.C.; Messrs. HOARE & Co., 37, Fleet Street, E.C.; or by

IRWIN H. BEATTIE, *Secretary.*

SAMARITAN FREE HOSPITAL

FOR WOMEN AND CHILDREN,

MARYLEBONE ROAD, LONDON, N.W.

Bankers—Sir SAMUEL SCOTT, Bart, and CO., 1, Cavendish Square.

THIS Hospital is for the reception of **Poor** Women afflicted with diseases **peculiar** to their sex. It has become world-famous for the treatment of internal tumours. Poor Women suffering from such diseases, and Children from all diseases, treated in the Out Department. No Payment demanded for Medicine. No Governor's Letter required by either **In-** or **Out-Patients**, the admission being **Entirely Free**.

OPERATION { *Physicians*—MONDAY, 2 p.m. Other days, 9.30 or 2.30
DAYS: { *Surgeons*—WEDNESDAY, 2.30 p.m. " " "

Duly qualified Practitioners only are allowed to witness operations.

All applications for admission to be addressed to the SECRETARY; and when the patient is unable by illness or distance to apply personally, a printed form will be furnished, which must be returned to the Secretary, duly filled up.

Out-Patients' Entrance—171, MARYLEBONE ROAD.

Attendance daily (Sundays excepted) from 12.0 to 2.0 p.m.

Qualifications of Governors—Annual Subscrip., £2 2s. Life Subscrip., £21.
CONTRIBUTIONS MUCH NEEDED. **GEORGE SCUDAMORE**, *Secretary.*

GUY'S HOSPITAL MEDICAL SCHOOL.

The Hospital contains 695 Beds, of which 500 are in constant occupation.

Special Classes are held for Students preparing for the Examinations of the University of London, and other Higher Examinations.

APPOINTMENTS.

All Hospital Appointments are made strictly in accordance with the merits of the Candidates, and without extra payment.

ENTRANCE SCHOLARSHIPS, Yearly in September.

TWO OPEN SCHOLARSHIPS in Arts, one of the value of £100, open to candidates under 20 years of age, and one of £50, open to candidates under 25 years of age. THREE OPEN SCHOLARSHIPS in Science, of the value of £150, £60, and £50, open to candidates under 25 years of age.

PRIZES AND SCHOLARSHIPS

Are awarded to Students in their various years, amounting in the aggregate to more than £650.

DENTAL SCHOOL.

A recognised Dental School is attached to the Hospital, which affords to Students all the instruction required for a Licence in Dental Surgery.

COLLEGE.

The Residential College accommodates about 50 Students in addition to the Resident Staff of the Hospital. It contains a large Dining Hall, Reading Room, Library, and Gymnasium for the use of the STUDENTS CLUB.

For Prospectus and further Information, apply to the Dean, Dr. SHAW, Guy's Hospital, LONDON, S.E.

LONDON (Royal Free Hospital) SCHOOL OF MEDICINE FOR WOMEN.

30, Handel St., Brunswick Sq.; & Royal Free Hospital, Gray's Inn Rd.

MEDICAL OFFICERS AND LECTURERS.

AT THE SCHOOL:—*Anatomy and Practical Anatomy*—Mr. Stanley Boyd, M.D., B.Sc., F.R.C.S. *Physiology and Practical Physiology*—Dr. E. H. Starling. *Chemistry*—Miss Evans, D.Sc. *Practical Chemistry*—Miss Lucy Boole, F.I.C. *Materia Medica and Therapeutics*—Dr. Harrington Sainsbury. *Elementary Physics and Biology*—Mrs. Ewart Macdonald, B.Sc. *Principles and Practice of Medicine*—Dr. Horatio Donkin and Miss Cock, M.D. *Principles and Practice of Surgery*—Mr. A. B. Barrow, F.R.C.S., and Mr. James Berry, F.R.C.S. *Midwifery and Diseases of Women*—Mrs. Scharlieb, M.D. *Forensic Medicine*—Dr. Dupre, F.R.S., and Mrs. Dowson, L.R.C.P. & S.I. *Pathology*—*Mental Pathology*—Dr. Mercier, F.R.C.S. *Ophthalmic Surgery*—Mr. Grosvenor Mackinlay, F.R.C.S. Ed. *Operative Surgery*—Mr. Stanley Boyd, M.B., B.S., F.R.C.S. *Operative Midwifery*—Miss McCall, M.D., L.R.C.P.I. *Demonstrator of Practical Gynecology*—Miss Helen Webb, M.B. *Demonstrators of Anatomy*—Mrs. Willmott Evans, M.B.; Miss Appel, M.B., B.Sc. *Assistant Demonstrators*—Miss Naylor, Miss Jones, Miss Young. *Demonstrator of Chemistry*—Miss Forrest, B.Sc. *Demonstrator of Physiology*—Miss Corhorn, M.B., B.Sc. *Practical Pharmacy*—Mrs. Clarke Keer.

AT THE HOSPITAL:—*Consulting Physicians*—Dr. John Cockle. *Consulting Surgeons*—Mr. Thomas Wakely, F.R.C.S.; Mr. Marsden, F.R.C.S.; Mr. Rose, F.R.C.S. *Physicians and Lecturers on Clinical Medicine*—Dr. Samuel West, Dr. Harrington Sainsbury. *Assistant Physicians*—Dr. Walter Carr, Dr. Raymond Crawford, Dr. John Fawcett. *Surgeons*—Mr. A. B. Barrow, F.R.C.S.; Mr. Berry, F.R.C.S.; Mr. Battle, F.R.C.S. *Lecturers on Clinical Surgery*—Mr. A. B. Barrow, F.R.C.S.; Mr. Berry, F.R.C.S. *Assistant Surgeons*—Mr. Roughton, F.R.C.S.; Mr. Willmott Evans, F.R.C.S. *Diseases of Women*—Dr. W. Hayes. *Ophthalmic Surgeons*—Mr. Grosvenor Mackinlay, F.R.C.S. Ed.; Mr. Work Dodd, F.R.C.S. *Diseases of Throat and Ear*—Mr. Roughton, F.R.C.S. *Diseases of Skin*—Mr. Willmott Evans, F.R.C.S., M.D. *Dental Surgeon*—Mr. Todd, M.R.C.S., L.D.S. *Medical Tutor and Demonstrator of Auscultation*—Dr. Walter Carr. *Pathological Demonstrator*—Dr. Crawford. *Demonstrator of Clinical Testing*—Dr. John Fawcett. *Surgical Tutors*—Mr. Roughton, F.R.C.S.; Mr. Willmott Evans, F.R.C.S. *Bacteriologist*—Mr. Roughton, F.R.C.S. *Medical Registrar*—Miss Appel, M.B., B.Sc., B.S. *Surgical Registrar and Anesthetist*—Miss Aldrich Blake, M.D., M.S. *Assistant Anesthetists*—Miss Fitter, M.D.; Miss Vernon, L.S.A. *Clinical Assistants*—Miss Calne, M.D.; Miss Chadburn, M.B.; Miss Russell, M.B.; Miss Sharman, M.B.; Miss Fitter, L.R.C.P. & S.; Miss Sutherland, L.R.C.P. & S.

Fee for Lectures and Hospital Practice, £125 if paid in one sum, £135 if paid in four instalments.

Information respecting Scholarships, etc., will be given on application to Mrs. Thorne, Hon. Secretary, or to Miss Doule, M.B. Lond., Secretary, at the School.

Mrs. GARRETT ANDERSON, M.D., Dean.

Miss COCK, M.D., Sub-Dean.

UNIVERSITY OF ABERDEEN (Founded 1494.)

FACULTY OF MEDICINE.

THE Degrees in Medicine granted by the University are—Bachelor of Medicine, Bachelor of Surgery, Doctor of Medicine, and Master of Surgery. They are conferred only after Examination, and only on Students of the University. Women are now admitted to instruction and graduation on the same footing as men. A Diploma in Public Health is conferred after Examination on Graduates in Medicine of any University of the United Kingdom.

The Faculty of Medicine embraces twelve chairs, from which instruction is given in all the main branches of Medical Science.

Practical Classes in connection with these chairs are conducted by the Professors and Assistants in Laboratories furnished with all the necessary appliances; and opportunities are afforded to Students and Graduates to extend their practical knowledge and engage in original research.

Instruction is also given in special departments of Medical Practice by Lecturers appointed by the University Court.

Clinical Instruction is obtained in the Royal Infirmary, Royal Lunatic Asylum, the Sick Children's Hospital, the City (Fever) Hospital, the General Dispensary, and Lying-in and Vaccine Institutions and the Ophthalmic Institution.

Bursaries, Scholarships, Fellowships and Prizes, to the number of 48, and of the annual value of £1153, may be held by Students in this Faculty.

The cost of Matriculation, Class and Hospital Fees for the whole curriculum, exclusive of the fees for the Degrees, is usually about £90.

A prospectus of the classes, fees, &c., together with the regulations for Graduation in Medicine and Surgery, may be had on application to the Secretary of the Faculty of Medicine.

R. W. REID, M.D., F.R.C.S., *Dean of Medical Faculty.*

LIVERPOOL

Royal Southern Hospital

Honorary Consulting Surgeon—Mr. Robert Hamilton.

Physicians—Dr. J. Cameron, Dr. W. Carter, Dr. W. Williams.

Surgeons—Mr. H. G. Rawdon, Dr. W. Alexander, Mr. Robert Jones.

Consulting Pathologist—Professor R. W. Boyce.

Lecturer on Practical Medicine—Dr. C. J. Macalister

Surgical Tutor—Mr. W. H. C. Davey. *Pathologist*—Dr. F. H. Barendt

Medical Tutor and Bacteriologist—Mr. Hugh R. Jones.

Honorary Ophthalmic Surgeon—Dr. R. Williams.

Honorary Aural Surgeon—Dr. C. G. Lee. *Laryngologist*—Dr. Pernewan.

Dentist—Mr. J. Royston. *House Surgeon*—Mr. W. N. Earlow.

Junior House Surgeons—Mr. C. E. Morris. Mr. J. Owen.

200 Beds. Clinical Lectures given by the Physicians and Surgeons during the Winter and Summer Sessions. Clinical Clerkships and Dresserships open to all Students. Special Wards for Accidents and Diseases of Children. Rooms for a limited number of Resident Students.

Fees for Hospital Practice and Clinical Lectures—Perpetual £26 5s; One Year, £10 10s. Six Months, £7 7s. Three Months, £4 4s. The practice of the Hospital is recognized by all examining Bodies.

ROYAL (Dick) VETERINARY COLLEGE,

8, CLYDE STREET, EDINBURGH.

TRUSTEES—THE LORD PROVOST, MAGISTRATES, AND TOWN COUNCIL OF THE CITY OF EDINBURGH.

The College Buildings have been entirely reconstructed, and the facilities afforded for the study of veterinary science are such as have not hitherto been available for Veterinary Students.

For Full Particulars apply to { J. R. U. DEWAR, Principal, or
Professor METTAM, Secretary.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN.

FOUNDED A.D. 1883.

Out-Patient Department - - LEICESTER SQUARE, W.C.

In-Patient Department - - 238, UXBRIDGE ROAD, W.

President: **The Right Hon. THE EARL OF CHESTERFIELD.**
.....

There are 50 Beds for In-Patients. The Out-Patient Practice may be attended free by Medical Practitioners every day from 1.30 to 4.0 p.m., also on Thursday mornings from 10.30 to 12.0, and every week night (except Saturday) from 6.30 to 8.0.

Lectures, followed by Clinical Demonstrations, on cases presenting themselves in the Out-Patient Department, are given during the week.

There are several Courses in the year, and the Fee for a Course is £1 1s.

J. DUNLOP COSTINE, Superintendent.

ST. LUKE'S HOSPITAL, LONDON, E.C.

ESTABLISHED 1751.

THIS Hospital was established for the TREATMENT of MENTAL DISEASES of the Middle Classes. Preference is given to acute cases, and these are admitted either gratuitously or on payment of a weekly sum varying from 14s. to 30s., according to the circumstances of each. Patients are eligible for admission from any part of the United Kingdom. Forms of application may be had from, and enquiries addressed to, the Secretary, at the Hospital.

The CONVALESCENT ESTABLISHMENT in connection with the Hospital is at St. LAWRENCE, near RAMSGATE.

W. H. BAIRD, *Secretary.*

National Orthopædic Hospital

(FOR THE DEFORMED),

234, GREAT PORTLAND ST., REGENT'S PARK, W.

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This Institution provides accommodation for Fifteen Ladies. The patients are under the immediate supervision of Miss ORR and the Family. There are extensive and beautiful views from the House and the surrounding Farm, which contains over 50 acres. The Gardens and Pleasure Grounds afford ample room for the Ladies' recreation.

A TRAINED AND HIGHLY-QUALIFIED NURSE IS EMPLOYED.

Terms Moderate. Prospectus on application to the PROPRIETORS.

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JAMES MURRAY'S ROYAL ASYLUM, PERTH.

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This Asylum, for Private Patients only, has been modernized and enlarged by the addition of *two wings* for the reception of acute cases, so as to render it an efficient *Hospital* as well as a comfortable *Home*.

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PECKHAM HOUSE, PECKHAM, S.E.

Extensive arrangements are made in this Asylum for the reception of Private Patients of both sexes.

Terms from 25/- per Week.

Further particulars can be obtained upon application to the RESIDENT PHYSICIAN.

CHURCH STREET, EPSOM.

THIS HOME has been established over forty years for the Care and Treatment of LADIES SUFFERING FROM MENTAL AILMENTS.

Terms, &c., on application to Dr. DANIEL, who resides in the House.

THE LAWN, LINCOLN.

Registered Hospital for Mental Diseases, situated in the City of Lincoln, near to the Cathedral.

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PRIVATE PATIENTS are received at the HOSPITAL for EPILEPSY and PARALYSIS and other DISEASES of the NERVOUS SYSTEM, 32, PORTLAND TERRACE, REGENT'S PARK, N.W. For particulars write to the Secretary.

Haydock Lodge Asylum, Newton-le-Willows, LANCASHIRE,

Is charmingly situated in a healthy and retired neighbourhood, midway between Liverpool and Manchester, about 2 miles from Newton-le-Willows Station on the London and North Western Railway. It is a comfortably-furnished Country Mansion, especially adapted for the care and treatment of persons of unsound mind.

Besides the use of the general sitting-rooms, &c., patients of both sexes can have private apartments and special attendants at moderate rates of payment. Information as to terms, &c., may be obtained on application to the Resident Medical Superintendent,

CHARLES T. STREET, L.R.C.P. Lond., M.R.C.S. Eng.

Telegrams—"STREET, ASHTON-IN-MAKERFIELD."

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The SPECIAL & SEPARATE DEPARTMENTS for Private Patients contain Large Dining and Drawing Rooms, of Fireproof Construction and Lighted by Electricity. Situation elevated and healthy, with extensive Recreation Gardens. Every kind of amusement, including Golf course.

Charge from £1 1s. per week.

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ABOUT THREE-AND-A-HALF HOURS FROM LONDON.

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PLYMPTON, SOUTH DEVON.

ESTABLISHED 1834.

Plympton House is the only Private Asylum in Devon and Cornwall. It is licensed for 23 male and 21 female patients. The house, which is a fine old country mansion, is situated in the midst of an estate of 30 acres of Park land; is five miles from Plymouth, and one mile from the Plympton Station of the Great Western Railway. The climate of South Devon is such as to recommend this Asylum as being particularly fitted for Insane Persons who are the subjects of Pulmonary Diseases. Male Patients can be received at present on particularly favourable terms.

Letters and Telegrams should be addressed to

Dr. ALDRIDGE, PLYMPTON, SOUTH DEVON,

The Resident Physician and Proprietor.

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A Registered Hospital for Private Patients only, of the upper and middle classes. Arranged and furnished with all the most approved appliances for the treatment, comfort, and amusement of the inmates. Within two miles of the Railway Station, and easily accessible by Rail from London and all parts of the kingdom. Is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of 240 acres.—For Terms, &c., apply to—

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NEAR EXETER.

A Registered Hospital for the Upper and Middle Classes.

This Institution is situated in a beautiful and healthy locality, within a short distance of the City of Exeter. There is comfortable accommodation at moderate rates, both in the Hospital itself and at Plantation House, Dawlish, a seaside residence on the South Devon Coast, affording more privacy, with the benefits of sea-air and a mild and salubrious climate. Private rooms and Special Attendants provided, if required. Voluntary Patients or "Boarders," not under certificates, also received.

For Terms, &c., apply to **P. MAURY DEAS, M.B., M.S. Lond.,**
Resident Medical Superintendent.

The Warneford Asylum, Oxford,

FOR THE CARE AND TREATMENT OF INSANE OF BOTH SEXES OF THE UPPER AND MIDDLE CLASSES.

President: THE RIGHT HON. THE EARL OF JERSEY.

Chairman of Committee: THE REV. THE WARDEN OF NEW COLLEGE, OXFORD.

THE Asylum is pleasantly situated on Headington Hill, and has been recently enlarged, the new accommodation being arranged, as far as is compatible with the requirements of an Asylum, in the manner of an ordinary private residence.

The ordinary charge for Patients is £2 2s. a week, but the Committee have power to increase or reduce the charges at their discretion. When a reduction of the ordinary charge is asked, a statement of the circumstances of the Patient should be made by letter to the Committee

Voluntary Boarders are also received.

Special Rooms and Attendants may be had if required.

For further particulars apply to the Med. Supt, J. NEIL, M.D.

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ARE PREPARED TO RECEIVE A LIMITED NUMBER OF
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LONDON, S.E.

SOUTH BEACON, HADLOW DOWN, BUXTED, SUSSEX.

Station—BUXTED (Brighton and South Coast Railway).

For Gentlemen requiring rest and freedom from worry, a comfortable home, replete with every form of amusement and occupation, situated in one of the most healthy and beautiful parts of Sussex.

Great success with **Nervous** and **Mental** Invalids, but none can be received who are capable of certification.

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(Late OLD PARK HALL, WALSALL.)

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Licensed under the Inebriates Acts 1879 and 1888, for the reception of Gentlemen desirous of overcoming habits of Intemperance or the abuse of drugs.

Splendid private enclosed grounds of 50 acres, lake of 12 acres. Every amusement provided, including nine-hole Golf Course, Cricket, Billiards, Bowls, Tennis (Asphalte and Grass Courts), Boating, Fishing, Photographic Dark Room, Carpenters' Shop. The air is very healthy and bracing.

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For Gentlemen, under the Act, and privately.

TERMS, 2 TO 3½ GUINEAS.

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For Gentlemen suffering from Alcoholism,
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Patients admitted under the Act and privately.

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Eight Miles from Salisbury, Four Miles from Porton, S.W.R.

PRIVATE HOME for a few Patients of good social position, who are received as Members of the Family, either privately or under the Inebriates' Act.

THE House is situated in a beautiful and very healthy locality, and stands in its own Grounds, with large Garden, Tennis Lawn, Billiard Table, Smoking Room, etc. Golf Links within two miles. Good Fishing, Shooting, Hunting, Hawking to be had in the neighbourhood.

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PRIVATE HOME FOR LADIES.

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Principal: H. M. RILEY, Assoc. Soc. Study of Inebriety.

Thirty years' experience. Excellent Medical References.

For Terms and Particulars apply MISS RILEY, or the Principal.

TREATMENT OF INEBRIATE GENTLEFOLK.

"Dunmurry," Sneyd Park, near Clifton, Glo's.

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A beautifully situated detached private residence, devoid of any features marking it as different from the other houses in Sneyd Park—a district reserved for houses occupied by the wealthier classes. There is not within a mile of "Dunmurry" a single place where any alcoholic drink can be purchased. None is ever allowed into the house under any circumstances whatsoever.

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A PRIVATE HOME FOR LADIES.

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FIRST-CLASS RETREAT FOR LADIES.

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RECEIVES and VISITS PATIENTS for BATHS and EXERCISES

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Electric and Vapour Baths.

HOME AND EDUCATION FOR THE Backward and Feeble-Minded

UNDER THE PERSONAL SUPERVISION AND MANAGEMENT OF

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WHO HAS GIVEN THIRTY YEARS TO THIS WORK.

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THIS HOME, which stands in extensive and beautiful grounds of forty acres, has been especially designed to provide the most complete facilities for the care, education and treatment of those of good social position who present any degree of mental deficiency. It is divided into a Main Building and a number of separate houses, standing in their own grounds, and thus affords exceptional scope for the proper classification of the various cases received.

Normansfield—A Training Home for the Feeble-Minded of either sex and any age, including quite young children.

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Gravel Soil, healthy locality, near Bushy and Richmond Parks.
Easy access from London by L. S. W. R., or by Road.

For Terms and Particulars address :—

NORMANSFIELD, HAMPTON WICK.

Education and Home Comforts for Boys of Feeble Intellect.



BEARSTED HOUSE, BEARSTED

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Superintendent and Proprietor: G. T. A'VARD.

Late Head Master of Earlwood Asylum.

BEARSTED HOUSE stands on its own grounds of four acres, and is pleasantly situated. A Medical Gentleman remarked of Bearsted: "It is one of the prettiest and healthiest villages in England." The house is commodious and the rooms are lofty. The grounds are secluded and are not overlooked in any way.

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"I can with the greatest confidence recommend any parent who has a child with a clouded intellect to send it to Bearsted House."—JOHN JOHNSTON, Surgeon.

A Doctor writes to the *Lancet*:—"A better place for weak-minded boys there cannot possibly be. A personal visit has convinced me that many parents with afflicted children would be rejoiced to hear of such a home for them."

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"SAMUEL KENWORTHY, Esq., of Southport Editor of "*Healthy Life*," writes:—"Having visited this Home, we can with confidence speak highly of its adaptability to its object. It is difficult to conceive a more suitable place for boys of 'clouded intellect.' Mr. G. T. A'VARD is the proprietor, receiving such as are mentally afflicted in a mild form only."

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"At the time I held the office of Head Master to the Earlwood Asylum, in Mr. A'VARD I had a very energetic and painstaking coadjutor. He is a thorough disciplinarian, patient and kind to the pupils. When I left Earlwood, Mr. A'VARD was appointed my successor. He is a good musician, playing the organ and conducting the Asylum Military Band. He is well acquainted with the various methods of combining instruction with amusement, and duly qualified to take charge of persons of feeble intellect. I heartily wish him success."—WILLIAM WOOD.

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ST. JOHN'S WOOD.

"DEAR MR. A'VARD,—I am so pleased with the improvement in my boy. He is altogether different, and he tells me he has never been as happy in his life as he has been with you."

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"On the advice of doctors in London I have just brought my son here, and am leaving with the assurance that the boys are in excellent hands. There are no bad cases, and the lads appear cheerful and happy, with every comfort about them."—R. D., Captain, Royal Navy.

ESTABLISHED FOURTEEN YEARS.

EDUCATIONAL HOME

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Children of Retarded Mental Development.

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for twenty-three years Medical Superintendent of the Royal Albert Asylum for Imbecile Children, Lancaster, receives into his Private Residence a limited number of Pupils, who, in consequence of mental backwardness or peculiarity, require special training under Medical Supervision. Kindergarten, Sloyd, Physical and Manual Training, under experienced Teachers. Home comforts and individual care.

The House stands in extensive grounds on the summit of Richmond Hill, adjoining the Park. Situation dry and bracing. Easy access from Waterloo, Willesden, or Metropolitan Stations.

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N.B.—Patients requiring to be certified under the "Idiots' Act" not admitted.

Downside Lodge, Chilcompton, Near BATH.

THIS HOME (long-established) for the Training and Education of Girls of the Upper Classes, who are Mentally Afflicted and unfit for ordinary schools, is under the personal care and superintendence of Miss PAGE, who has had much experience in such cases. References to Medical Men and others Terms, etc., on application.

THE MOAT HOUSE, TAMWORTH, STAFFORDSHIRE.

A HOME FOR NERVOUS AND MENTAL CASES. Stations, L. & N. West and Mid. Railways.

The House stands in grounds of ten acres (within five minutes' drive of either station), and is devoted to the care and treatment of a few Ladies suffering from Nervous and Mental Disorders, who enjoy the comforts, privacy, and occupations of home life. Voluntary patients are received without certificates.

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GROSVENOR,

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EDUCATIONAL HOME for Boys of the Upper Classes, under experienced and successful Management. Highly recommended by Medical Men.

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BRUNTON HOUSE is a Branch Establishment of the ROYAL ALBERT ASYLUM, which is a Home and School for 600 Imbecile and Feeble-minded Young Persons of both sexes.

BRUNTON HOUSE provides, for a small number of **FEEBLE-MINDED PUPILS OF THE UPPER CLASSES**, the retirement and comforts of a

PRIVATE HOME,

with the instruction, occupations, and amusements of a large Public Institution, under responsible management.

Extensive private grounds ; salubrious and picturesque situation, with charming views of Morecambe Bay, the Lake Mountains, &c.

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FOR TERMS AND OTHER INFORMATION, APPLY TO—

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ROYAL ALBERT ASYLUM, LANCASTER.

BACKWARD AND FEEBLE-MINDED CHILDREN.

Winchester House, Kingston Hill, SURREY.

A Private Home for the Care, Education and Treatment of Backward and Feeble-Minded Children of good social position. A limited number, capable of improvement, are received. The education is of a special character, adapted to the requirements of each child, who receives personal supervision, individual care and attention, as well as all the comfort and privacy of home life. The House stands on an elevated position in grounds of three acres, on gravel soil, and is close to Coombe Wood and Richmond Park. The air is bracing, and there are pleasant walks in the neighbourhood. Cricket and other games provided. It is reached by a drive (12 miles) from London, or by the Norbiton Station on the South Western Railway, one mile distant.

For further particulars, apply to the RESIDENT PHYSICIAN, late Medical Superintendent for eighteen years in a large Institution for Feeble-Minded Children.

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Recently acquired by Mr. Philp, Late Proprietor of the Cockburn Hotel, Edinburgh.

Situated in one of the healthiest and loveliest parts of Scotland, forming a most excellent Winter and Spring Residence.

Climate mild and equable; completely sheltered from the north winds.



Recreation & Billiard rooms
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Red Ash and Grass
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BATHS—
Russian, Turkish,
Electric,
Pine, etc.

Massage
Treatment.

The Sanitary Arrangements are Perfect.

Within easy access of the Trossachs, Loch Katrine, Loch Lomond, Loch Tay, Loch Earn, &c.

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No. Intoxicants allowed. About an hour's rail from Glasgow and Edinburgh.

GOLF COURSE OF NINE HOLES. Newly added—**A CYCLE DEPOT.**

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UNEQUALLED situation overlooking Rothesay Bay. Magnificent views. Climate mild and equable, sheltered from east winds.

Sea Water pumped daily for **BATHS**—Turkish, Russian, Electric, Pine, and Medicated Baths. **MASSAGE** by experienced Masseurs.

Exceptionally Fine Bedrooms. Spacious Public Rooms.

**Electric Light. Elevator. Billiards. Tennis.
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WINTER TERMS, £2 2s. per week for Residence of not less than 4 weeks.

DR. PHILP, Resident Physician.



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Station—MATLOCK BRIDGE.

Telegrams—"SMEDLEYS, MATLOCK."

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A new suite of Baths has been added, including Turkish and Russian Baths for Ladies, Aix Douches, and a complete Electric Installation for Baths and Medical Purposes.

The Establishment has now over 200 Bedrooms.

Terms from 2½ to 4 Guineas per Week inclusive. (*Reduction in Winter.*)

Special provision for Invalids. American Elevator, Electric Light, Night attendance, Rooms well ventilated, and all Bedrooms warmed in Winter throughout the Establishment

Massage, Weir-Mitchell & Nauheim methods of Treatment can always be given.

A large Staff (upwards of 50) of Trained Male and Female Nurses, Masseurs, and Attendants.

Prospectus and full information on application to the Manager.

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430 FEET ABOVE SEA.

Founded to meet the needs of Invalids who require any of the systematic methods of treatment with skilled nursing.

Bathing arrangements specially adapted for very delicate patients.

SCARBOROUGH HYDRO.



This Establishment is located in the best sheltered and healthiest position in the Queen of Watering Places.

The atmosphere is bracing and salubrious all the year round.

Turkish, Russian, Electric, and all other approved BATHS.

Massage, Billiards, Tennis, &c.

Medical Attendant: DR. MEGGINSON.

TERMS FROM 6/- PER DAY.



Clifton Grand Spa AND Hydropathic Establishment, CLIFTON, BRISTOL.

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BEAUTIFULLY situated on the brink of the Avon Gorge, 230 feet above the river, and near the Suspension Bridge; close to the Clifton and Durdham Downs (442 acres).

Forming part with the establishment is the CLIFTON GRAND SPA, a magnificent Pump Room for the supply of the warm saline water of the Hotwells Spring, formerly of great repute in consumption, diabetes, etc. Here musical and dramatic entertainments are frequently held.

The BATHS are of the most complete and modern kind. Separate Turkish and Russian Baths for Ladies and Gentlemen. Provision for all kinds of Hydro-thermal Treatment, also for Aix Douches, Nauheim Saline Baths, Ling's Medical Gymnastics (by Swedish experts), Massage, Weir-Mitchell Cure, and the various electric and hydro-electric methods.

The Baths are open at certain hours to visitors not residing in the Establishment, and the resident physician will be pleased to co-operate with any other practitioner.

All bedrooms and corridors kept at a uniform temperature in the winter months. Electric Lighting throughout. Private sitting rooms; Hydraulic lift; good cuisine, with special provision for the needs of invalids; night watchman; Swedish drill class; tennis, bowls, billiards; terraced grounds with band stand and shelters. Excellent golf links near.

Ready access, by means of the Rocks Railway, to starting point of Bristol Channel Steamers plying to Ilfracombe, Cardiff, Clovelly, Tenby, Mumbles, etc.

For Prospectus and further particulars address **THE MANAGER.**

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Telephone No. 5655.



DEESIDE HYDROPATHIC ESTABLISHMENT,

HEATHCOT, near ABERDEEN.

The Climate of Deeside is the most healthy and bracing in Great Britain. Residents in this Establishment have the privilege of preserved Salmon and Trout Fishing in the River Dee, as it runs through the Estate of Heathcot.

The Turkish and other Baths are constructed with all the latest improvements necessary for the practice of Hydropathy. A Golf course is within the grounds.

Terms per week, £2 10s.; for two having same bedroom, £2 5s. each. From 1st November to 30th April, £1 15s.

For particulars apply to Dr. STEWART, Medical Superintendent, Heathcot, near Aberdeen.

Royal York Turkish Bath & Therapeutic Establishment,

Including **Massage and Electricity, Electric Bath** (*Patented 1867*), constant and interrupted, **Vapour, Sulphur, Mercurial and Medicated Baths**, and the novel **Volcanic Mud Poultice Treatment**.



Particulars & Pamphlet of the Manager,
54, York Terrace, York Gate,
*Opposite Marylebone Church,
Near Madame Tussaud's.*

Established 1820. Rebuilt 1884.

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Smedley's Hydropathic Establishment.

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TERMS: From 7/6 per diem (Including Turkish, Russian, and all other Baths).

Omnibuses run between the house and Southport every half hour.

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Hazelwood Hydropathic and Sanatorium, GRANGE-OVER-SANDS (LANCS.).



Physician—

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The Establishment has just been extensively enlarged, and a new Electrical Department added.

Special Accommodation is now made for Invalids.

All Hydropathic Baths, Electric Baths, Massage, &c., are given.

WEIR-MITCHELL TREATMENT:

Ladies, 6 Guineas.

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Ordinary Terms: 2½ to 4 Guineas
(Reduced for a prolonged visit).

THE CLIMATE IS ESPECIALLY SUITABLE FOR THOSE WITH CHEST AFFECTIONS.

From London 5½ hours via L.N.W.R. Prospectus on application to Manager.

THE HAMMAM OR TURKISH BATH, 76, JERMYN STREET, S.W. (FOUNDED 1862)

Total number of Bathers to 31st Dec., 1897, 1,117,145.

The Bath is open daily from 7 a.m. to 9 p.m.; on Sunday from 9 a.m. to 3 p.m. (Entrance by side door.)

TERMS OF ADMISSION:—

Annual Ticket £8 8s.

7 a.m. to 7 p.m.—Single Ticket, 4s.; Six Tickets, 20s.; Twelve Tickets, 36s. (3s. each). After 7 p.m., Single Ticket, 2s.

Members of the Medical Profession (on presenting their card) can obtain Medical Tickets at the reduced rate of 2s.

No Tickets issued after 8 p.m. Bath closes at 9 p.m.

EXPERIENCED MASSEURS can be provided to attend upon Gentlemen at their own residence on application to the Secretary; or Gentlemen may be massaged at the Hammam without going into the Hot Rooms of the bath.

CAFE, OR RESTAURANT.

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CONTENTS:

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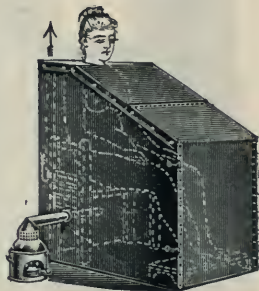
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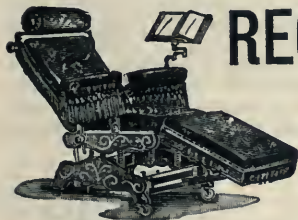


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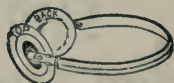
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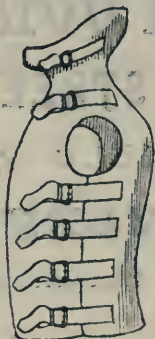


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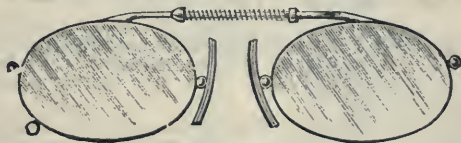
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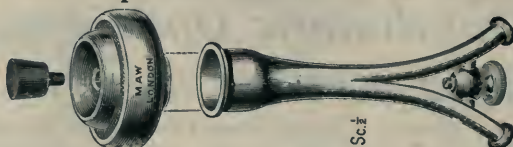
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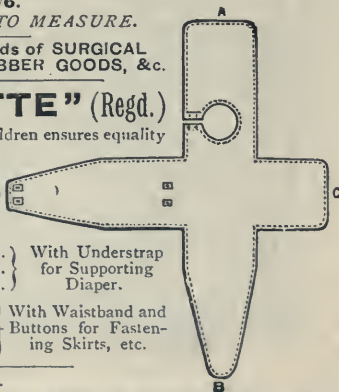
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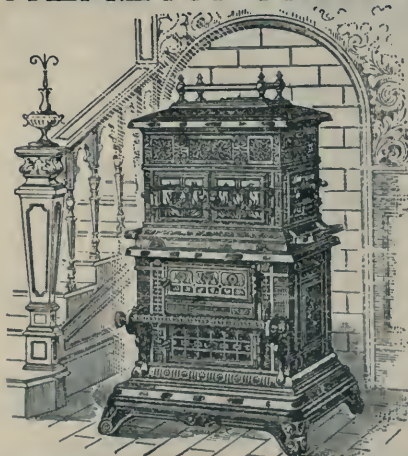
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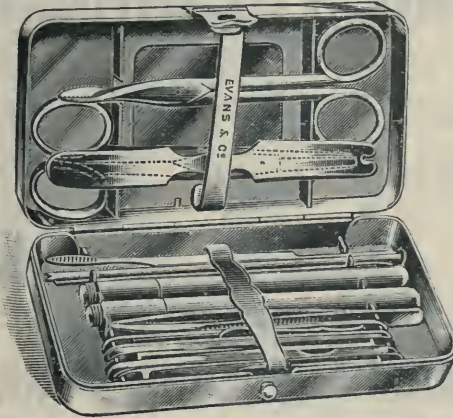
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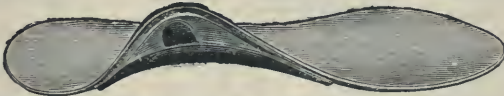
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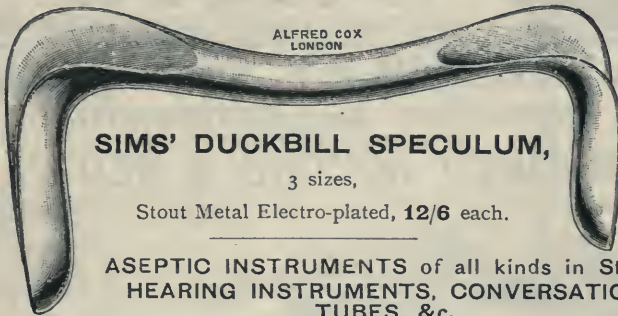
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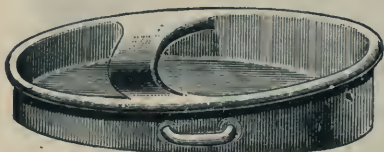
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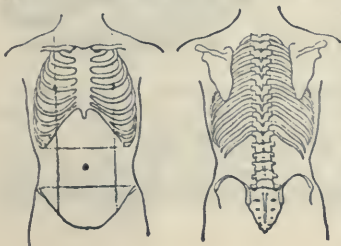
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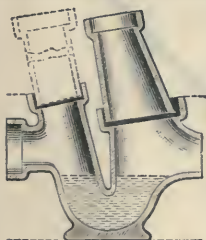
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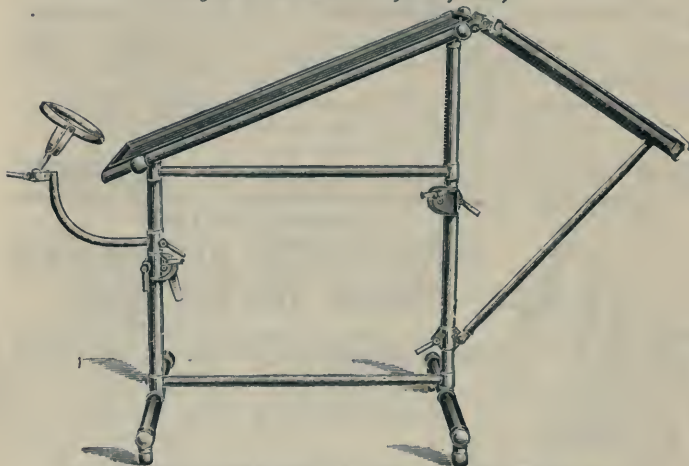
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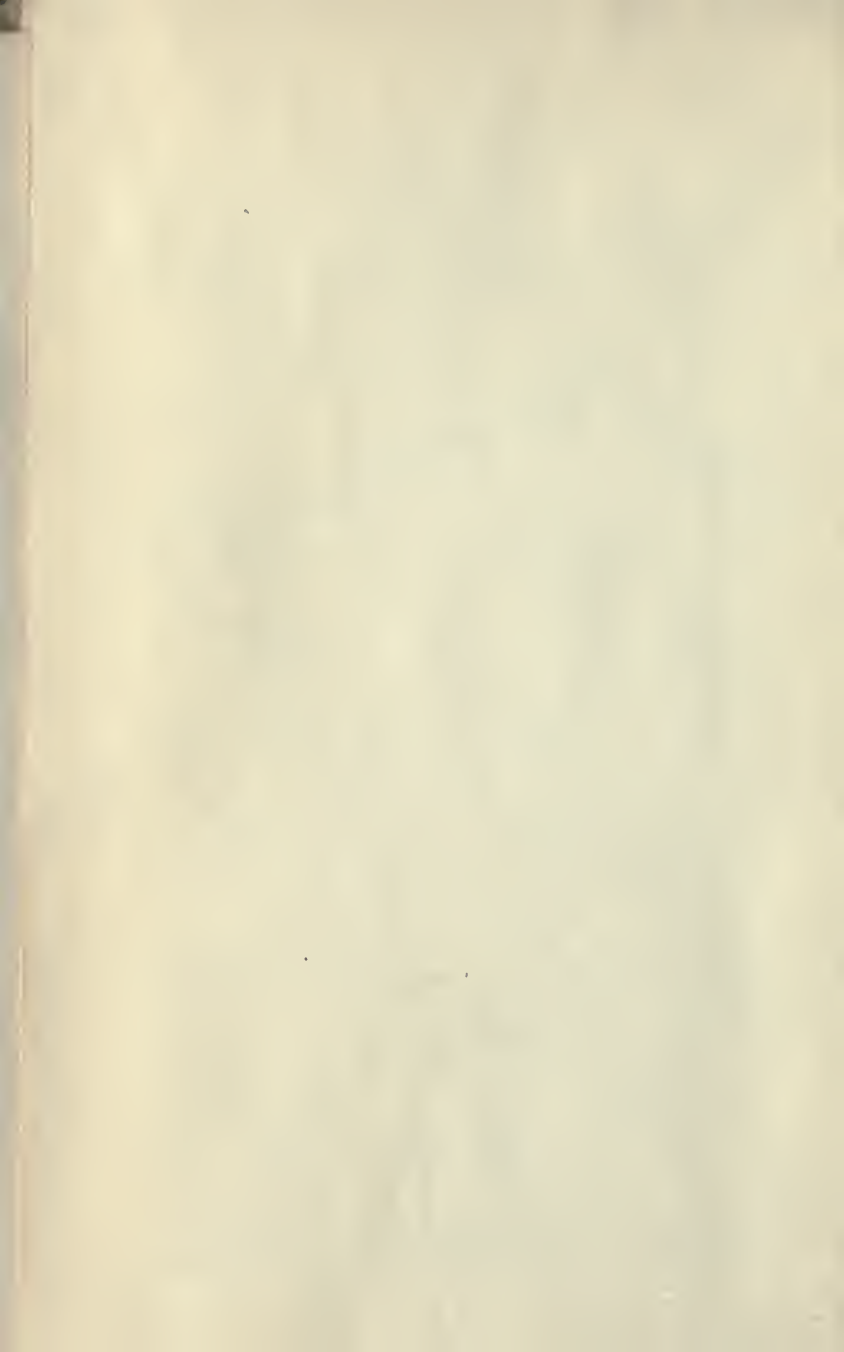
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